



Repair Manual Audi TT 2015 ➤

Brake System

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- 46 Mechanical Components
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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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00 – General, Technical Data

1 Identification

(Edition 03.2024)

A005A008421 - 03.07.2024

⇒ "1.1 PR Number Allocation - Brakes", page 1

⇒ "4.1 Technical Data, Brakes", page 6

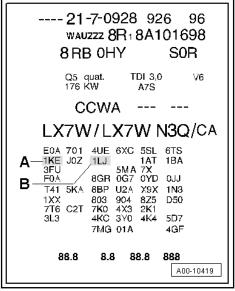
1.1 PR Number Allocation - Brakes

Vehicle Data Label

The corresponding PR number on the vehicle data label indicates which brakes are installed on the vehicle, among other things.

- Example of a vehicle data label:
- A Rear Brakes (Example)
- B Front Brakes (Example)

Vehicle data label component location. Refer to ⇒ Maintenance; Booklet 826; General Information; Vehicle Data Label.



ELSA/Vehicle-Specific Notes

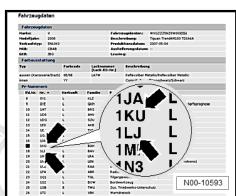
The relevant information regarding the brakes installed can also be obtained through ELSA/vehicle-specific notes.

♦ Example of a display:

1KU - Rear Brakes (Example)

1LJ - Front Brakes (Example)

- ◆ Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA).
- ◆ The tables (refer to ⇒ "4 Technical Data", page 6) explain the PR numbers. These are important for the brake caliper/brake rotor and brake pad combination.







2 Safety Precautions

⇒ "2.1 Safety Precautions when Working on Vehicles with Start/
Stop System", page 2

⇒ "2.2 Safety Precautions during Road Test with Testing Equipment", page 2

2.1 Safety Precautions when Working on Vehicles with Start/Stop System

There is a risk of injury if the internal combustion engine starts unexpectedly.

The engine may start unexpectedly in vehicles with the Start/ Stop System activated. Parts of the body can be pinched or pulled in.

- Switch off the ignition and electrical equipment.
- Place the vehicle key and other start authorization systems (such as smartphones) outside of the vehicle interior.

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2.2 Safety Precautions during Road Test with Testing Equipment

There is a risk of injury from unsecured testing equipment.

If the front passenger side airbag unit deploys during an accident, testing equipment that is not properly secured will be thrown around dangerously.

- Secure testing equipment on the rear seat.
- Have a second person operate the testing equipment on the rear seat.
- In vehicles with two seats, deactivate the front passenger airbag and move the front passenger seat as far back as possible.

3 Repair Information

- ⇒ "3.1 Identification Plates", page 3
- ⇒ "3.2 Impact Wrench, Using", page 3
- ⇒ "3.3 Guidelines for Clean Working Conditions", page 4
- ⇒ "3.4 General Repair Information", page 4
- ⇒ "3.5 Contact Corrosion", page 4

3.1 Identification Plates

- ♦ When replacing components, the existing identification plates on the used parts that indicate the replacement part purposes, in part or in whole, is not number in the ⇒ Electronic Raits Catalog (ETKA) pmust be t guarantee or accept any liability transferred to the new part according to the specifications cument. Copyright by AUDI AG.
- Replace any identification, warning and information labels on vehicle components that are unreadable or damaged, and re-attach them in the same location. Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA).

3.2 Impact Wrench, Using

Pay attention to additional information in the repair manual.

Exceptions:

 No impact wrenches are allowed when working within an opened high-voltage battery and when working near natural gas systems. Pay attention to the general information.

Removing/detaching:

- Removing bolts and nuts using a suitable impact wrench is generally permitted.
- Bolts (bolt head and protruding threads) and nuts must be cleaned before removal.

Installing/attaching:

Installing and attaching nuts is permitted using a suitable impact wrench when paying attention to the following conditions.

- Position the bolts and nuts by hand.
- Only use an impact wrench with an adjustable speed and torque range.
- ◆ The impact function of the impact wrench may not be used.
- The maximum speed must not exceed 300 RPM.
- Use suitable screwdriver bits (for example plastic-coated bits) close to delicate surfaces.
- Install or attach bolts with locking fluid or self-locking nuts with low speed.
- ♦ Only install or attach bolts and nuts until they stop.
- Apply the additional tightening specification by hand using a torque wrench.
- Use a torque wrench with angled rotation function or a rigid torque wrench for the prevailing angle of torque.

3.3 Guidelines for Clean Working Conditions

- ♦ The highest level of cleanliness is required when working on the brake system. Using any products which contain mineral oil such as oils, greases etc. is strictly prohibited.
- Thoroughly clean all connection points and their surrounding areas before loosening. However, do not use aggressive cleaning agents such as brake cleaner, gasoline, thinners or similar compounds.
- Place the removed parts on a clean surface and cover them.
- Carefully cover or seal any open components if the repairs cannot be performed immediately (use plugs).
- ♦ Only use lint-free cloths
- Remove the replacement parts from their packaging just prior to installing them.
- Only use parts in their original packaging.
- If the system is open, do not work with compressed air and do not move the vehicle.
- ♦ Make sure that brake fluid cannot get into the connectors.

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3.4 General Repair Information correctness of information in this document. Copyright by AUDI AG.

- Clean the bolts and nuts before reusing.
- ♦ Always replace damaged nuts and bolts.
- Always replace self-locking nuts and bolts.
- ♦ Do not damage or bend the vacuum lines.
- A damaged vacuum line must be replaced.



Risk of destroying the brake lines by bending.

Never change the shape of the brake lines.



There is a risk of contamination and paint damage from leaking brake fluid.

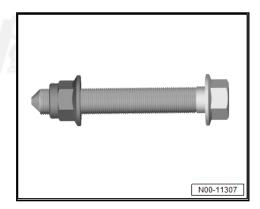
Rinse off any leaking brake fluid immediately using plenty of water.

3.5 Contact Corrosion

Contact corrosion can occur if incorrect fasteners (bolts, nuts, washers, etc.) are used.

For this reason, only fasteners with a special surface coating may be installed.

Furthermore, only rubber/plastic parts and adhesive made of electrically non-conductive materials are used.



If there are doubts about whether parts can be used or not, then use new parts. Refer to the \Rightarrow Electronic Parts Catalog (ETKA) .

Note:

- ◆ The use of Audi original replacement parts is recommended, since they are tested and approved.
- ♦ The use of Audi original accessories is recommended.





4 Technical Data

⇒ "4.1 Technical Data, Brakes", page 6

4.1 Technical Data, Brakes

Brake system

Components	Version
Brake circuit distribution	Dual-circuit brake system with diagonal distribution: left front and right rear, right front and left rear
Brake Master Cylinder	Tandem brake master cylinder
Brake booster	Vacuum brake booster
Brake pressure regulator	Via ABS Control Module - J104-

⇒ "5.5 Brake Rotor, Checking", page 9

Steel front brakes

PR Number		1LJ, 1LP, 1ZD, 1ZF, 1ZL, 1ZT, 1ZV, 1ZW	1LH, 1LK, 1LW, 1LY	1LL, 1LN, 1LU, 1ZK
Brake Caliper	7			
Brake Caliper Piston		1	4	8
Brake Rotor	diame- ter in mm	312	338	370
New thickness	mm	25	30	34
			ial purposes, in 2.8 t or in whole, is	
Brake pads, wear limit with	ted unless au respect to th	Refer to ⇒ Maintenan Brak	ce ; Booklet 826 ; Mair e Pad Thickness, Chec	ntenance Procedures; cking

Ceramic front brakes

PR Number		1LF		
Brake Caliper				
Brake Caliper Piston		8		
Brake Rotor	diame- ter in mm	370		
New thickness	mm	34		
Wear limit		Refer to ⇒ <u>"5.5.2 Brake Rotors,</u> Checking, Ceramic Brakes", page 11		
Brake pads, wear limit		Refer to ⇒ Maintenan Brak	ce ; Booklet 826 ; Main e Pad Thickness, Chec	ntenance Procedures; cking

⇒ "1 Front Brakes", page 46

Rear Brakes

PR Number		1KE, 1KZ, 2EC	1KV, 2ED, 2EN, 2EP	1KX, 2EE, 2EF, 2EG, 2EK, 2ER, 2ES, 2ET
Brake Caliper				
Brake Caliper Piston		1	1	1

PR Number		1KE, 1KZ, 2EC	1KV, 2ED, 2EN, 2EP	1KX, 2EE, 2EF, 2EG, 2EK, 2ER, 2ES, 2ET
Brake Rotor	diame- ter in mm	272	300	310
New thickness	mm	10	12	22
Wear limit	mm	8	10	20
Brake pads, wear limit			ce ; Booklet 826 ; Mair e Pad Thickness, Ched	

⇒ "2 Rear Brakes", page 87





5 Brake Inspection

- ⇒ "5.1 General Information", page 8
- ⇒ "5.2 FWD Vehicles, Checking", page 8
- ⇒ "5.3 AWD Vehicles, Checking", page 8
- ⇒ "5.4 Parking Brake, Checking", page 8
- ⇒ "5.5 Brake Rotor, Checking", page 9

5.1 General Information

- ♦ The operation takes place on a test stand.
- When testing, manual transmission vehicles must be in idle and DSG transmission vehicles must be in driving position N
- Always follow the instructions from the test stand manufacturer.



Note

Brake control systems are inoperative when the ignition is switched off.

5.2 FWD Vehicles, Checking

Test on a one-axle roller test stand

- The brake inspection is to be performed on a one-axle roller test stand.
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- ◆ The test speed must not exceed 6 km/h (3:7°mph), to therwise of information in this document. Copyright by AUDI AG. the brakes may lock up due to the roller start-up delay (EDL regulation).
- ◆ Test stands approved by Audi meet these requirements.

5.3 AWD Vehicles, Checking

- During this test, the wheels of one axle are driven in opposite directions, to prevent delivering power to the other axle.
- The test speed must not exceed 6 km/h (3.7 mph), otherwise the brakes may lock up due to the roller start-up delay (EDL regulation).
- ◆ Test stands approved by Audi meet these requirements.

5.4 Parking Brake, Checking

Activating »TÜV mode«:

- · The seat belt is buckled.
- · Rear axle in the one-axle roller test stand
- The engine is off and the ignition is on.
- Auto Hold is off.
- The front wheels must be stationary.
- The rear wheels must rotate for at least five seconds nonstop between 2.5 and 9 km/h (1.6 and 5.6 mph)
- »TÜV mode« is indicated when the yellow Electric Parking Brake Malfunction Indicator Lamp K214- is displayed.

 The yellow electro-mechanical parking brake symbol with a line through it appears in the instrument cluster. Refer to the
 ⇒ Owner's Manual, Instruments and Indicator Lamps .



Note

The electromechanical parking brake does not lock all the way in the »TÜV mode« immediately.

Operating the Electro-Mechanical Parking Brake Button - E538-three to four times increases the tension in stages.

Operating the Electromechanical Parking Brake Button - E538-a fifth time loosens the electromechanical parking brake.

 Start the engine and wait approximately five seconds until there is enough vacuum.

Ending »TÜV mode«:

- Front wheels, speed greater than 0 km/h (0 mph)
- Rear wheels, speed less than 2.5 km/h (1.6 mph) or greater than 9 km/h (5.6 mph)
- Ignition off.

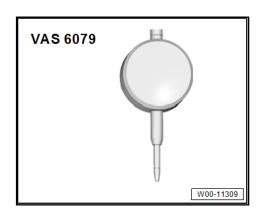
5.5 Brake Rotor, Checking

- ⇒ "5.5.1 Brake Rotor, Checking, Steel Brakes", page 9
- ⇒ "5.5.2 Brake Rotors, Checking, Ceramic Brakes", page 11

5.5.1 Brake Rotor, Checking, Steel Brakes

Special tools and workshop equipment required

- ◆ PDigital Dial Gauge of VAS 6668/1 mora Brake Disc Verniere, is not page 1 vAS 6343 4 A hot fill strated on guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
- ◆ Dial Indicator 0-10mm VAS 6079-



- ◆ Dial Indicator Bracket VAS 6079/1- , not illustrated
- Respective wheel is removed. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

Cracks, Evaluating

- Hairline cracks on the brake rotor friction surface are often noticed during brake repairs. Hairline cracks up to 10 mm long are not a technical flaw and do not justify a brake rotor replacement.
- Brake rotors and brake pads that have a worn through friction surface should be replaced.

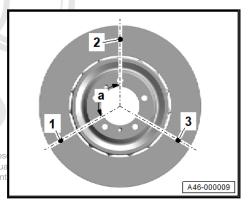
Wear, Measuring

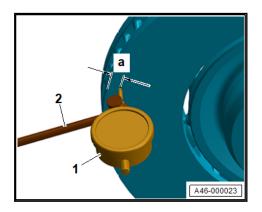
Due to varying contact pressures of the brake pistons to the brake pad there are different wear areas on the friction surface.

- Brake rotor in the center wear area = measure the highest wear level
- With Dial Gauge VAS 6668/1- or Brake Disc Vernier Gauge
 VAS 6343- at, at least, the different locations -1-, -2- and
 -3- by -a- = 120° apart from each other.
- If a measured value is below the wear value specified on the brake rotor: replace the brake rotors on both sides of the axle.

Brake Rotor Lateral Run-Out, Measuring

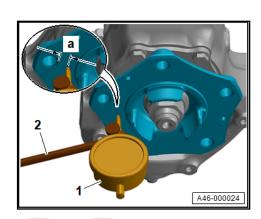
- Only perform the measurement of the brake rotor lateral run-out, if the following conditions are met;
- There are vibrations when ipraking the correctness of information in this document
- Brake rotors are without scoring, hotspots, burn marks and blue discoloration.
- · Wheels and tires are OK and balanced.
- Tighten the brake rotor to the wheel hub using five wheel bolts placed underneath or five other bolts that are suitable. For the tightening specification. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- The completely installed bolts must not touch the wheel bearing housing behind!
- Clean dirt and rust off the brake rotor.
- Mount the Dial Indicator Bracket VAS 6079/1- -item 2- at a suitable location on the wheel bearing housing.
- Mount the Dial Indicator 0-10mm VAS 6079- -item 1with slight pretension and measure the lateral run-out at the dimension -a- from the outer edge of the brake rotor.
- Dimension -a- = 10 mm
- When measuring, slowly turn the brake rotor via the threaded connection on the drive axle outer joint either by hand or using a hand ratchet.
- If the lateral run-out of the brake rotor is less than 0.06 mm: the brake rotor is OK.
- If the lateral run-out of the brake rotor is greater than 0.06 mm: measure the lateral run-out of the wheel hub.





Wheel Hub Lateral Run-Out, Measuring

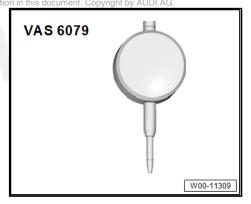
- Remove either the front brake rotor (refer to ⇒ "1.6 Brake Rotor, Removing and Installing", page 84) or the rear brake rotor (refer to ⇒ "2.6 Brake Rotor, Removing and Installing", page 101).
- Mount the Dial Indicator Bracket VAS 6079/1- at a suitable location on the wheel bearing housing.
- Mount the Dial Indicator 0-10mm VAS 6079- with slight pretension and measure the lateral run-out at the dimension -a- under the holes for the wheel hub.
- Dimension -a- = 5 mm
- When measuring, slowly turn the wheel hub via the threaded connection on the drive axle outer joint either by hand or using a hand ratchet.
- If the lateral run-out of the wheel hub is greater than 0.02 mm: replace the wheel hub.
- If the lateral run-out of the wheel hub is less than 0.02 mm: replace the brake rotor.



5.5.2 Brake Rotors, Checking, Ceramic Brakes

Special tools and workshop equipment required

- ♦ Carbon-Ceramic Brake Wear Tester Total AS 681,3 In not illustrated private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
- ◆ Dial Indicator 0-10mm VAS 6079-



◆ Dial Indicator Bracket - VAS 6079/1-, not illustrated

Cracks

- Check the friction surface of the ceramic brake rotor:
- The friction surface on a new ceramic brake rotor already has stress cracks which occur during the production process. These stress cracks are all different.
- Stress relief cracks do not mean the ceramic brake rotor is faulty.
- ♦ The stress cracks are somewhat visible and can be different from each other in strength.

Wear, Measuring

- For a quick measurement: respective wheel installed or removed, brake caliper installed.
- For an exact measurement: respective wheel is removed, brake caliper is detached and placed at least 50mm away from the brake rotor.
- Brake rotor temperature between 0 and 40 °C (32 and 104 °F) when measuring.

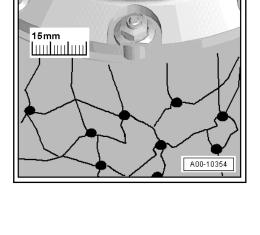
Tip

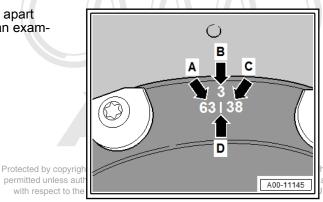
Attention, when doing the quick measurement: the metal shield lowers the measured value.

Check and calibrate the Carbon-Ceramic Brake Wear Tester - VAS 6813- , if necessary refer to ⇒ Operating Instructions .

The measurement device measures the damage to the carbon fiber reinforced material of the brake rotor. Due to temperature effects, carbon fibers of the inner structure of the brake rotor are damaged increasingly and the wear value lowers.

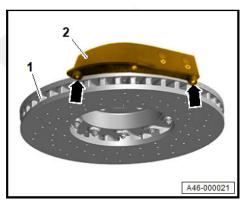
 Measure the brake rotor at three locations -B-, 120° apart from each other, shown for measuring point "3" as an example.





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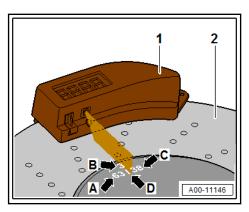
 Position the Carbon-Ceramic Brake Wear Tester - VAS 6813- -2- with the roll-stops and the bottom, flat to the measuring point "1" of the brake rotor -1- -arrows-.

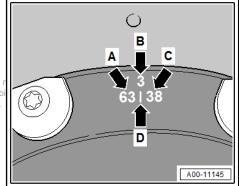


 Move the Carbon-Ceramic Brake Wear Tester - VAS 6813along the outer edge -2- of the brake rotor until the laser beam points precisely at the -D- marking on the brake rotor.



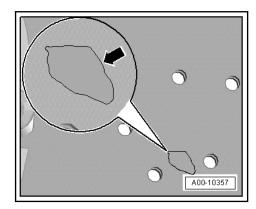
- Read the measured value and note it down.
- Repeat the measurement at the measuring points "2" and "3".
- Compare the measured values with the wear value -C-shown here as an example, shown here as an example.
- If a measured value is below the wear value -C specified on any liab the brake rotor: replace the brake rotor.





Chips/Broken-Off Pieces, Evaluating

- Check the friction surface on the ceramic brake rotor for any chipping and/or broken-off pieces.
- Multiple chips/broken-off pieces -arrow- on a friction surface are permitted.
- If there are any individual chips/broken-off pieces -arrow-larger than 1 cm², replace the brake pad.



Edge Damage, Evaluating

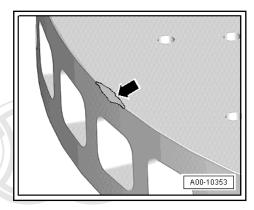
- Check the ceramic brake rotor for damage to the edges.
- Maximum permitted width/depth = 2 mm.
- ◆ Maximum permitted length = 10 mm.
- Maximum three edge damages.

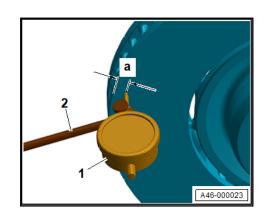
Surface Changes

- Check the friction surface of the ceramic brake rotor for topping application.
- If a pad transfer layer is determined, then check the following:
- Check the air routing to the brake rotor for completeness, correct securing and damage.
- Check the brake pad quality.
- Check the perforation holes for debris.
- Clean the holes with a high pressure cleaner pray attention invate or commercial purposes, in part or in whole, is not to the environmental and safety precautions a authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
- Never work on the holes mechanically.

Brake Rotor Lateral Run-Out, Measuring

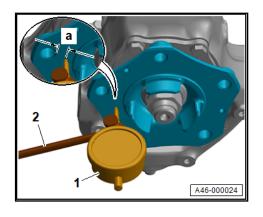
- Only perform the measurement of the brake rotor lateral run-out, if the following conditions are met:
- · There are vibrations when braking.
- Brake rotors are without scoring, hotspots, burn marks and blue discoloration.
- · Wheels and tires are OK and balanced.
- Tighten the brake rotor to the wheel hub using five wheel bolts placed underneath or five other bolts that are suitable. For the tightening specification. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- The completely installed bolts must not touch the wheel bearing housing behind!
- Clean dirt and rust off the brake rotor.
- Mount the Dial Indicator Bracket VAS 6079/1- -item 2- at a suitable location on the wheel bearing housing.
- Mount the Dial Indicator 0-10mm VAS 6079- -item 1with slight pretension and measure the lateral run-out at the dimension -a- from the outer edge of the brake rotor.
- Dimension -a- = 10 mm
- When measuring, slowly turn the brake rotor via the threaded connection on the drive axle outer joint either by hand or using a hand ratchet.
- If the lateral run-out of the brake rotor is less than 0.06 mm: the brake rotor is OK.
- If the lateral run-out of the brake rotor is greater than 0.06 mm: measure the lateral run-out of the wheel hub.





Wheel Hub Lateral Run-Out, Measuring

- Remove the brake rotor. Refer to ⇒ "1.6.2 Brake Rotor, Removing and Installing, Ceramic Brakes", page 84.
- Mount the Dial Indicator Bracket VAS 6079/1- -item 2- at a suitable location on the wheel bearing housing.
- Mount the Dial Indicator 0-10mm VAS 6079- -item 1with slight pretension and measure the lateral run-out at the dimension -a- under the holes for the wheel hub.
- Dimension -a- = 5 mm
- When measuring, slowly turn the wheel hub via the threaded connection on the drive axle outer joint either by hand or using a hand ratchet.
- If the lateral run-out of the wheel hub is greater than 0.02 mm: replace the wheel hub.
- If the lateral run-out of the wheel hub is less than 0.02 mm: replace the brake rotor.



6 Electrical Components

⇒ "6.1 Diagnostic Entries", page 16

6.1 Diagnostic Entries

- ◆ 1. ABS Control Module J104-, replacing
- ◆ 2. Hydraulic Unit, Removing and Installing/Replacing
- ♦ 3. Rear Brakes Brake Pads, Removing
- 4. Left and Right Parking Brake Motor Left Parking Brake Motor - V282- / Right Parking Brake Motor - V283- , Removing and Installing

1. ABS Control Module - J104-, replacing

- ♦ 0001 OBD-capable systems
- 0003 ABS Control Module J104
- ♦ 0003 ABS Control Module J104, Functions
- ♦ 0003 Control module, replacing

2. Hydraulic Unit, Removing and Installing/Replacing

- ♦ 0001 OBD-capable systems
- 0003 ABS Control Module J104
- ♦ 0003 Anti-Lock Braking System, Functions
- ♦ 0003 output diagnostic test mode
- 0003 Intake Valve and Hydraulic Pump Output Diagnostic Test Mode

3. Rear Brakes Brake Pads, Removing

- ♦ 0001 OBD-capable systems
- 0003 ABS Control Module J104
- 0003 ABS Control Module J104, Functions
- 0003 Removing brake pads

4. Left and Right Parking Brake Motor Left Parking Brake Motor - V282- / Right Parking Brake Motor - V283- , Removing and Installing

- ♦ 0001 OBD-capable systems
- 0003 ABS Control Module J104
- ◆ 0003 ABS Control Module J104, Functions
- 0003 Basic setting
- 0003 Integrated Parking Brake, Basic Setting -J540





45 – Antilock Brake System

1 General Information

⇒ "1.1 Anti-Lock Braking System (ABS) Repair Information", page 17

1.1 Anti-Lock Braking System (ABS) Repair Information

ABS malfunctions do not affect the brake system and the booster. The conventional brake system remains operative even without ABS. A change in braking behavior must be anticipated. When the ABS indicator lamp comes on the rear wheels can lock-up early when braking!

- ◆ The ABS is generally maintenance-free.
- ♦ Testing, assembly, and repair work may only be performed by qualified personnel.
- By not observing the points described in the repair manual, the system can be damaged and vehicle safety could be compromised.
- Before servicing the ABS, determine the cause of the damage using OBD.
- ♦ When installing a new hydraulic control module, the coding must be checked using the ⇒ Vehicle diagnostic tester.
- When handling brake fluid, observe the applicable safety precautions and information.
- Bleed the brake system using the Brake Charger/Bleeder or in whole, is not Unit - VAS6860- for all work that requires opening the hyer accept any liability draulic systems high and low-pressure testing should also be AUDI AG. performed on the brake system.
- During the final road test, make sure that an ABS-controlled brake test is performed at least once (pulsation must be felt at the brake pedal).

2 Component Location Overview

⇒ "2.1 Component Location Overview - ABS/ESP", page 18

2.1 Component Location Overview - ABS/ESP





1 - Front Speed Sensor

- Right Front ABS Wheel Speed Sensor - G45- / Left Front ABS Wheel Speed Sensor - G47-
- Check in "Guided Fault Finding" using the ⇒ Vehicle diagnostic tester.
- □ Refer to ⇒ "4.1 Overview - Front Axle Speed Sensor", page

2 - Brake Lamp Switch - F-/ Brake Pedal Switch - F63-

- □ RHD: is a mirror image
- ☐ Refer to ⇒ "3.2 Brake Lamp Switch, Removing and Installing", page 134

3 - Vacuum Sensor - G608-

- Depending on vehicle equipment
- RHD: is a mirror image
- \square Refer to \Rightarrow "4.4 Vacuum Sensor G608, Removing and Installing", <u>page 170</u>

4 - ABS Hydraulic Unit - N55with ABS Control Module -J104permitted unless authorise

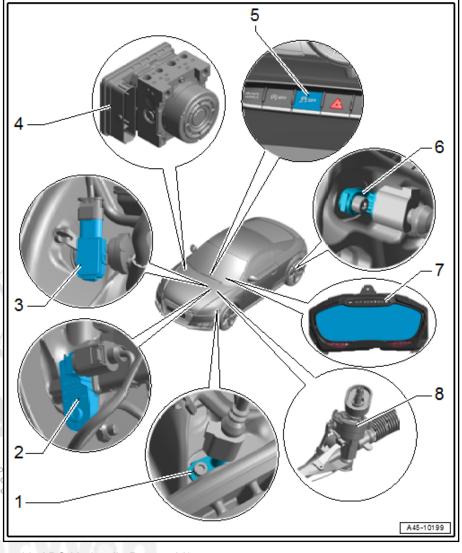
- Component location: in the right rear engine compartment
- ☐ RHD: is a mirror image
- ☐ ABS Hydraulic Unit N55- with ABS Hydraulic Pump V64-
- ☐ The hydraulic pump cannot be replaced separately.
- ☐ Components in the ABS Control Module J104-:
- Transverse Acceleration Sensor G200-
- Rotation Rate Sensor G202-
- Brake Pressure Sensor 1 G201-
- ♦ Longitudinal Acceleration Sensor G251-
 - ☐ Check in "Guided Fault Finding" using the ⇒ Vehicle diagnostic tester.
 - Refer to ⇒ "3.1 Overview Control Module and Hydraulic Unit", page 21
 - Refer to ⇒ "3.3 Control Module, Separating from Hydraulic Unit", page 37

5 - ASR/ESP Button - E256-

- □ Component location: inside the center console
- ☐ Check in "Guided Fault Finding" using the ⇒ Vehicle diagnostic tester.
- □ Removing and Installing. Refer to ⇒ Electrical Equipment; Rep. Gr. 96; Controls; Component Location Overview - Center Console Controls .

6 - Rear Speed Sensor

- Right Rear ABS Wheel Speed Sensor G44- / Left Rear ABS Wheel Speed Sensor G46-
- ☐ Check in "Guided Fault Finding" using the ⇒ Vehicle diagnostic tester.



☐ Refer to ⇒ "4.2 Overview - Rear Axle Speed Sensor", page 41

7 - Instrument Cluster

- ☐ With ASR/ESP Indicator Lamp K155-
- ☐ The indicator lamp cannot be replaced separately.
- □ RHD: is a mirror image

8 - Steering Gear

- ☐ With Steering Angle Sensor G85-
- ☐ The steering angle sensor cannot be replaced separately
- □ RHD: is a mirror image





Control Module and Hydraulic Unit 3

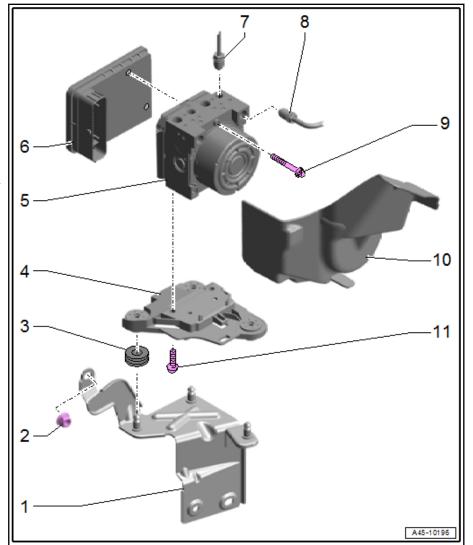
- ⇒ "3.1 Overview Control Module and Hydraulic Unit", page 21
- ⇒ "3.2 ABS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing", page 26
- ⇒ "3.3 Control Module, Separating from Hydraulic Unit", page 37
- ⇒ "3.4 Control Module, Installing on Hydraulic Unit", page 38
- 3.1 Overview - Control Module and Hydraulic Unit
- ⇒ "3.1.1 Overview Control Module and Hydraulic Unit, LHD", page 21
- 3.1.1 Overview - Control Module and Hydraulic Unit, LHD

Control Module and Hydraulic Unit





- 1 Bracket
- 2 Nut
 - □ 20 Nm
- 3 Rubber Bushing
- 4 Mounting Bracket
- 5 ABS Hydraulic Unit N55-
 - Refer to ⇒ "3.2 ABS Control Module J104 / ABS Hydraulic Unit N55 , Removing and Installing", page 26
- 6 ABS Control Module J104-





Note

- ◆ If the ABS Control Module -J104- is faulty, the control module can be replaced separately.
- If the ABS Hydraulic Pump -V64- is faulty the ABS Hydraulic Unit - N55- must be replaced together with the ABS Control Module - J104- .
- ♦ The ABS Hydraulic Pump V64- may not be removed.
- □ Refer to ⇒ "3.2 ABS Control Module J104 / ABS Hydraulic Unit N55, Removing and Installing", page 26
- □ Refer to ⇒ "3.3 Control Module, Separating from Hydraulic Unit", page 37
- ☐ Refer to ⇒ "3.4 Control Module, Installing on Hydraulic Unit", page 38

7 - Brake Line

- ☐ To the brake caliper
- ☐ License plate: 5.25 mm diameter and union bolt with M12x1 thread
- ☐ 14 Nm

8 - Brake Line

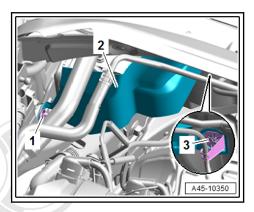
Ц	From brake master cylinder to the hydraulic unit
	License plate: 6 mm diameter and union bolt with M12x1 thread
	14 Nm
9 - To	orx Bolt
	Tighten the new Torx bolts in two steps, switching back and forth.
	1. Step: preliminary tightening specification: 1 Nm to 1.5 Nm (to position the seal)
	2. Step: final tightening specification: 2.5 Nm
10 - F	Heat Shield
	There are different versions. Refer to the ⇒ Electronic Parts Catalog (ETKA) for the allocation.

□ Refer to ⇒ Fig. ""Heat shield - threaded version"", page 23 11 - Torx Bolt

□ 8 Nm

Heat shield - threaded version

- Replace the self-locking nut after removing.
- Tighten the nut -1- to 8 Nm.
- Press on the bracket for the lock washer -3- all the way.



ABS Control Module - J104-





1 - Pressure Sensor Contact

- Do not touch the contacts
- ☐ The illustration depends on the model

2 - Pressure Sensor

- Must not be changed or damaged
- □ Cannot be replaced
- ☐ The illustration depends on the model

3 - Seal

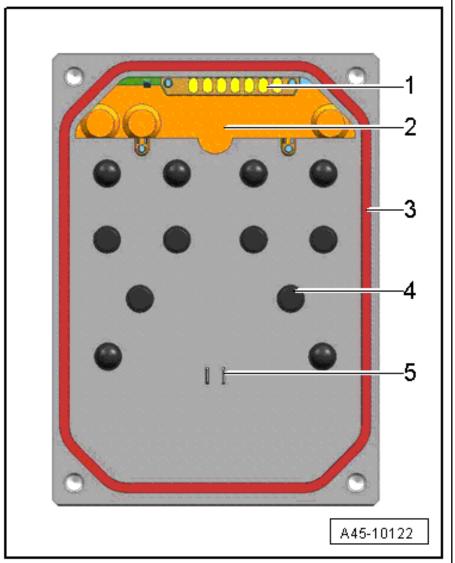
- ☐ Must not be pulled out or raised up
- ☐ Cannot be replaced

4 - Valve Body

- Must not be damaged or bent
- Do not use any tools

5 - Pump Motor Contact

Must not be damaged or bent



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3.1.2 Overview - Control Module and Hydraulic Unit, RHD (Not for North America Market)

1 - Brake Line

- Brake master cylinder/secondary piston circuit to hydraulic unit
- ☐ Identification: 6 mm diameter and union bolt with a M12 x 1 thread
- With standard tool: 14
- With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench - Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert -AF 11mm): 12 Nm

2 - Brake Line

- Brake master cylinder/primary piston circuit to hydraulic unit
- ☐ Identification: 6 mm diameter and union bolt with a M12 x 1 thread
- With standard tool: 14 Nm
- With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench - Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert -AF 11mm): 12 Nm

3 - Brake Line

- □ To the right rear brake caliper
- ☐ Identification: 5.25 mm diameter and union bolt with a M12 x 1 thread
- With standard tool: 14 Nm
- With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert - AF 11mm): 12 Nm

4 - Brake Line

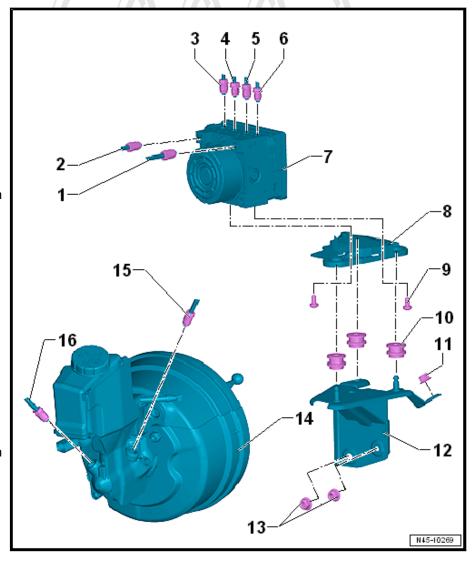
- □ To the left front brake caliper
- ☐ Identification: 5.25 mm diameter and union bolt with a M10 x 1 thread
- With standard tool: 14 Nm
- ☐ With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert - AF 11mm): 12 Nm

5 - Brake Line

- ☐ To the right front brake caliper
- ☐ Identification: 5.25 mm diameter and union bolt with a M12 x 1 thread
- ☐ With standard tool: 14 Nm
- ☐ With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert - AF 11mm): 12 Nm

6 - Brake Line

- □ To the left rear brake caliper
- ☐ Identification: 5.25 mm diameter and union bolt with a M10 x 1 thread



	With standard tool: 14 Nm
	With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench - Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert - AF 11mm): 12 Nm
7 - /	ABS Hydraulic Unit - N55- with ABS Control Module - J104-
	Removing and Installing. Refer to ⇒ "3.2.2 ABS Control Module and ABS Hydraulic Unit, Removing and Installing, RHD (Not for North America Market)", page 32.
3 - E	Bracket
	After installing, heck for secure fit
9 - E	Bolt Control of the C
	3 8 Nm
10 -	Rubber Bushing
11 -	Nut
	2 20 Nm
12 -	Bracket
13 -	Nut
	20 Nm
14 -	Brake Booster with Master Brake Cylinder
	Overview: refer to <u>⇒ "3.1 Overview - Brake Booster/Brake Master Cylinder", page 129</u> .
15 -	Brake Line
	Brake master cylinder/primary piston circuit to hydraulic unit
	Identification: 6 mm diameter and union bolt with a M12 x 1 thread
	With standard tool: 14 Nm
L	With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench - Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert - AF 11mm): 12 Nm
16 -	· Brake Line
	Brake master cylinder/secondary piston circuit to hydraulic unit
	Identification: 6 mm diameter and union bolt with a M12 x 1 thread
	With standard tool: 14 Nm
	With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench - Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert - AF 11mm): 12 Nm
3.2	ABS Control Module - J104- / ABS Hy-
	draulic Unit - N55- , Removing and In-
	stalling

⇒ "3.2.1 ABS Control Module and ABS Hydraulic Unit, Removing and Installing, LHD", page 26
 3.2.1 ABS Control Module and ABS Hydraul-

ic Unit, Removing and Installing, LHD

Special tools and workshop equipment required

♦ Vehicle Diagnostic Tester



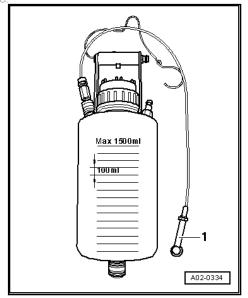
♦ Brake Pedal Actuator - V.A.G 1869/2- .



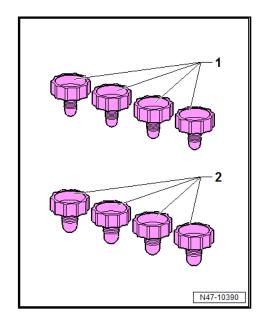
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with respect to the correctness of information in this document. Copyright by Collection bottle from the Bleeding Equipment - VAS 6860or Brake Charger/Bleeder Unit - VAS 5234-

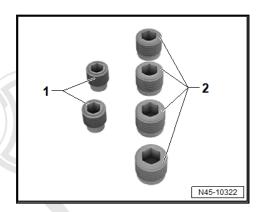




Plugs from the Repair Kit - 1H0 698 311 A-: M10 -item 1and M12 -item 2-



Plugs from the Assembly Part Set - 5Q0 698 311- : M10 -item 1- and M12 -item 2-



Removing

- If replacing the control module, select the "Replace control module" program. Refer to ⇒ "6.1 Diagnostic Entries", page
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- Insert the Brake Pedal Actuator V.A/Gr#869/2^{be}-itemrA^{ss of information} between the brake pedal and driver seat. Press the brake pedal down at least 60 mm.



Note

By doing this, the valves in the brake master cylinder are closed and the brake fluid reservoir does not run empty.



CAUTION

Leaking brake fluid increases the risk of injury. Risk of skin irritation and injury.

- Wear safety gloves.
- Remove the protective cap -3- from the bleed screw -1- on the left front caliper.
- Connect the collection bottle hose -2- as shown.
- Open the bleed screw to reduce the pressure in the brake system.
- Close the bleed screw and remove the collection bottle.
- Repeat the procedure on the left rear brake caliper.



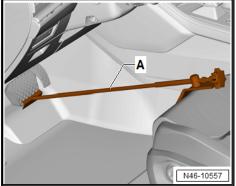
Note

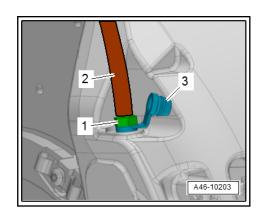
Do not remove the Brake Pedal Actuator - V.A.G 1869/2-.

 Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .

Vehicles with TDI Engine:

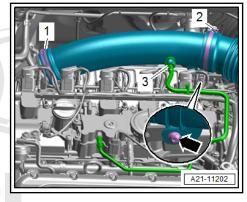
Remove the front exhaust pipe. Refer to ⇒ Rep. Gr. 26;
 Exhaust Pipes/Mufflers; Front Exhaust Pipe, Removing and Installing.





Vehicles with 2.5L TFSI engine

- Drain the coolant. Refer to ⇒ Rep. Gr. 19; Cooling System/Coolant; Coolant, Draining and Filling .
- Remove the air filter housing. Refer to ⇒ Engine Mechanical; Rep. Gr. 24; Air Filter; Air Filter Housing, Removing and Installing
- Press the release buttons on both sides and disconnect the hose -3- for the crankcase ventilation on the air duct pipe.
- Remove the bolt -arrow-.
- Loosen the hose clamp -1- and remove the air duct pipe.



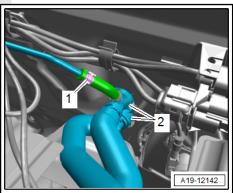


Note

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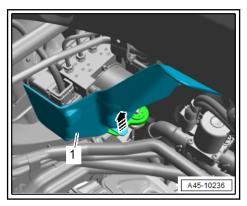
Place a cloth under the heater core for the neater, to catch escaping coolant.

- Loosen the hose clamp -1- and remove the coolant hose.
- Lift the clips -2-, remove the coolant hose from the heater core for the heater and move it to the side.



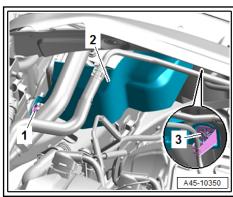
Equipment versions with heat shield version 1:

Release the retainer -arrow-, pull the heat shield -1- off to the left and remove it.



Equipment versions with heat shield version 2:

- Remove the nut -1- and remove the bracket with the lock washer -3-.
- Remove the heat shield -2-.



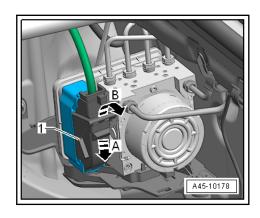
All:

- Unclip the wiring guide.
- Press the locking mechanism downward -arrow A-.
- Release the connector -arrow B-.
- Remove the connector -1-.



Note

- Make sure that no brake fluid enters the control module connector housing. This could lead to contact corrosion and thereby cause the system to fail.
- Clean a dirty connector housing thoroughly with compressed air
- To protect against escaping brake fluid, place enough lintfree cloths in the area below the hydraulic control unit.



! NOTICE

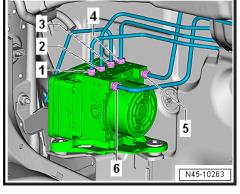
Risk of destroying the brake lines by bending.

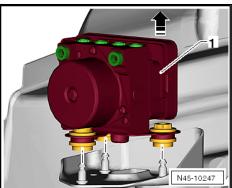
- Never forcefully bend the brake lines in the hydraulic unit area.
- Mark the brake lines on the hydraulic control module.
- Remove the union bolts for the brake lines in the sequence
 1 through 6- and push the brake lines slightly to the side.
- Immediately close open connection points with a clean plug.

Vehicles with TFSI Engine:

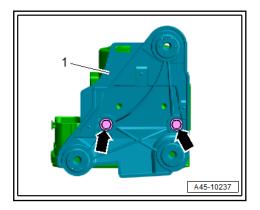
 Pull the hydraulic control unit -1- upward -arrow- and remove it.

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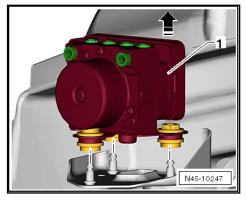


 Should the hydraulic control module be replaced, remove the bolts -arrows- and remove the mounting bracket -1-.



Vehicles with TDI Engine:

- Remove the hydraulic control module -1- upward -arrow-.
- Turn the hydraulic control module in the engine/motor compartment upward with the mounting bracket.



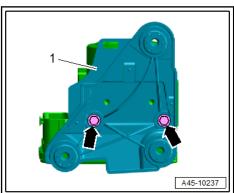
- Remove the bolts -arrows- and remove the mounting bracket -1- from the hydraulic control unit.
- Turn the hydraulic control unit and place it on the subframe.
- Remove the hydraulic control unit from below.

Installing

Install in reverse order of removal while noting the following:

Vehicles with TDI Engine:

- Place the hydraulic control unit on the subframe.
- Install the mounting bracket for the hydraulic control module in the vehicle.



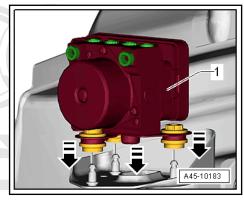
Continuation for All Vehicles:

Push the hydraulic control module -1- with the bracket into the pins in the engine compartment -arrows-.



Note

- The hydraulic control module must rest in all pins.
- Only remove the plugs on the new hydraulic unit if the corresponding brake line is installed.
- If the plugs are removed too early from the hydraulic unit, brake fluid can escape and the unit may not be sufficiently filled or adequately bled.
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- When installing the hydraulic control module with the hydraulic control with the hydraulic control with the hydraulic control with the hydraul rubber buffer is not pushed out of the bracket.



Identification of the hydraulic unit.

A - Hydraulic Unit To Master Brake Cylinder Primary Piston Circuit -HZ2-

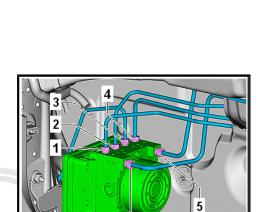
B - Hydraulic Unit To Master Cylinder Secondary Piston Circuit -HZ1-

- 1 Hydraulic Unit To Right Rear Brake Caliper -HR-
- 2 Hydraulic Unit To Left Front Brake Caliper -VL-
- 3 Hydraulic Unit To Right Front Brake Caliper -VR-
- 4 Hydraulic Unit To Left Rear Brake Caliper -HL-

NOTICE

Risk of destroying the brake lines by bending.

- Never forcefully bend the brake lines in the hydraulic unit area.
- Insert all brake lines into the ABS Hydraulic Unit N55install all union bolts by hand and tighten in the sequence -1 through 6-.
- After securing the brake lines on the hydraulic unit select the "intake valve and hydraulic pump output diagnostic test mode". Refer to ⇒ "6.1 Diagnostic Entries", page 16.
- Remove the Brake Pedal Actuator V.A.G 1869/2-.
- Refer to ⇒ "6.2 Hydraulic System, Bleeding", page 178
- Fill the coolant. Refer to ⇒ Rep. Gr. 19; Cooling System/Coolant; Coolant, Draining and Filling.
- Install the engine cover. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing .
- If the ABS Control Module J104- / ABS Hydraulic Unit -N55- is replaced, complete the "control module, replacing" program. Using the ⇒ Vehicle diagnostic tester.



6

2

3

N45-10244

N45-10263



CAUTION

Faulty brakes increase the risk of an accident vate or commercial purpos

Make sure the brakes are working correctly before driving the vehicle for the first time.

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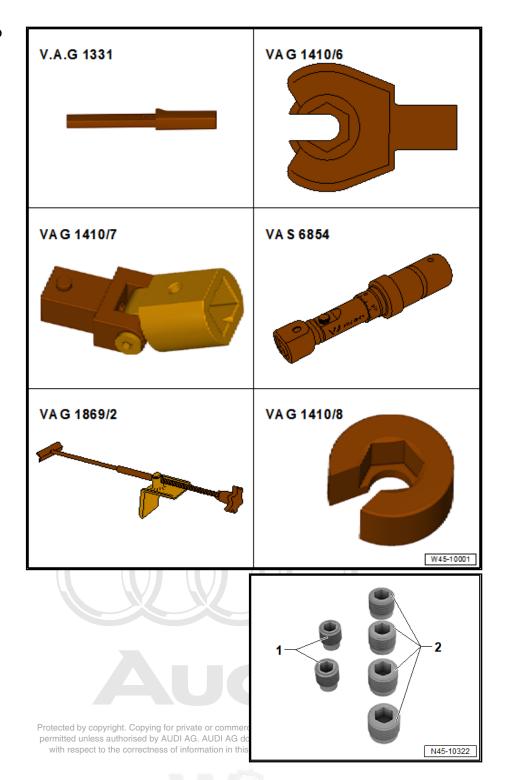
В

Tightening Specifications

- Refer to ⇒ "3.1 Overview Control Module and Hydraulic Unit", page 21
- Refer to ⇒ Rep. Gr. 24; Air Filter; Overview Air Filter Housing.
- Refer to ⇒ Rep. Gr. 26; Exhaust Pipes/Mufflers; Overview Mufflers .

3.2.2 ABS Control Module and ABS Hydraulic Unit, Removing and Installing, RHD (Not for North America Market)

Special tools and workshop equipment required



- ◆ Torque Wrench, 6-50Nm VAG 1331A-
- ♦ Open Ring Spanner Insert AF 11mm V.A.G 1410/6-
- ♦ Torque Wrench Universal Joint V.A.G 1410/7-
- ♦ Mini Torque Wrench VAS 6854-
- Brake Pedal Actuator V.A.G 1869/2- .
- Torque Wrench Assembly Tool V.A.G 1410/8-

 Plugs from the Assembly Part Set - 5Q0 698 311- : M10 -item 1- and M12 -item 2-

Component location of the ABS Hydraulic Unit - N55- and the ABS Control Module - J104- in RHD vehicles:

- 1 Brake Booster with Master Brake Cylinder
- 2 ABS Hydraulic Unit N55- and ABS Control Module J104-

Removing



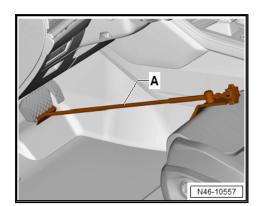
Risk of destroying the brake lines by bending.

- Never forcefully bend the brake lines in the hydraulic unit area.
- Insert the Brake Pedal Actuator V.A.G 1869/2- -item Abetween the brake pedal and driver seat. Press the brake pedal down at least 60 mm.



Note

By doing this, the valves in the brake master cylinder are closed and the brake fluid reservoir does not run empty.



N45-10162

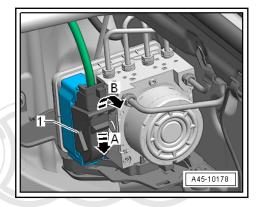
Press the locking mechanism downward -arrow A-.



Note

The illustration shows the installation position of the ABS Hydraulic Unit - N55- and the ABS Control Module - J104- in a LHD vehicle.

- Release the connector in the -direction of the arrow B-.
- Remove the connector -1-.





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- Remove the protective cap -3- from the bleed screw -1- on the left front caliper.
- Connect the collection bottle hose -2- as shown.
- Open the bleed screw to reduce the pressure in the brake system.
- Close the bleed screw and remove the collection bottle.
- Repeat the procedure on the left rear brake caliper.



Note

Do not remove the Brake Pedal Actuator - V.A.G 1869/2-.

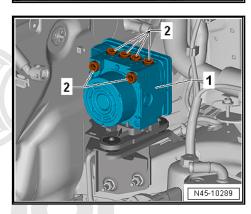
Place enough lint-free cloths under the ABS Control Module J104- and the ABS Hydraulic Unit - N55- .



Note

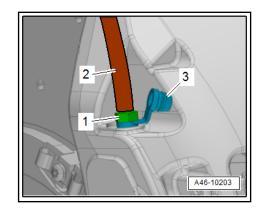
Make sure that none of the brake fluid gets onto the electrical contacts on the ABS Control Module - J104-.

- First label both brake lines from the brake master cylinder -A- and -B-.
- Remove the brake master cylinder brake lines -A- and -Bfrom the ABS Hydraulic Unit - N55-.
- Immediately seal the threaded holes with the plugs from the Assembly Řepair Kit 5Q0 698 311.
- N45-10270
- Label the remaining brake lines (brake caliper) and remove.
- Seal the threaded holes -2-.
- Place the dust caps for the bleeder valves on the brake lines.



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- Remove the ABS Hydraulic Unit N55- -1- together with the bracket -2- in the -direction of the arrow-.
- This will remove the rubber buffers -arrows- from the bracket stud bolts -3- at the same time.
- Guide out the hydraulic unit from the vehicle.

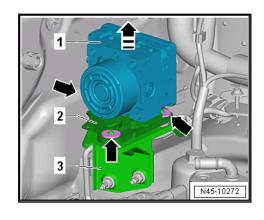
Installing

Install in reverse order of removal while noting the following:



Note

- Do not remove plugs on the new hydraulic unit until the corresponding brake line is about to be installed.
- If the plugs are removed too early from the hydraulic unit, brake fluid can escape and the unit may not be sufficiently filled or adequately bled.
- When installing the hydraulic unit, make sure that the rubber bushings are not pushed out of the bracket.
- Before assembling the holder for the ABS Hydraulic Unit -N55- in the bracket, spray the rubber bushings with Silicone Lubricant Spray - D 007 000 A2- .
- Install the brake lines carefully with the Torque Wrench -Assembly Tool - V.A.G 1410/8-.







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Brake Line Tightening Sequence:

- Pre-tighten the brake lines in the sequence -1- to -6-.
- Tighten the brake lines in the sequence -1- to -6-.
- Remove the Brake Pedal Actuator V.A.G 1869/2- .
- Refer to ⇒ "6.2 Hydraulic System, Bleeding", page 178.
- If the ABS Control Module J104- / ABS Hydraulic Unit -N55- is replaced, complete the "control module, replacing" program. Using the ⇒ Vehicle diagnostic tester.

CAUTION

Faulty brakes increase the risk of an accident.

Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

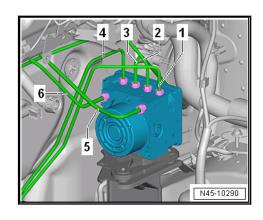
- Refer to ⇒ "3.1 Overview Control Module and Hydraulic Unit", page 21
- Refer to ⇒ Rep. Gr. 24; Air Filter; Overview Air Filter Housing.
- Refer to ⇒ Rep. Gr. 26; Exhaust Pipes/Mufflers; Overview - Mufflers .

Tightening Specifications

- Refer to ⇒ "3.1 Overview Control Module and Hydraulic Unit", page 21
- Refer to ⇒ "1.1 Overview Front Brakes", page 46
- Refer to ⇒ "2.1 Overview Rear Brakes", page 87

Control Module, Separating from Hy-3.3 draulic Unit

Special tools and workshop equipment, Copyright, Copyright or commercial purposes, in part or in whole, is not special tools and workshop equipment, equipment and special tools and special purposes, in part or in whole, is not special tools and workshop equipment. ♦ ESD Work Surface - VAS 6613-





♦ Torx insert T25

Procedure

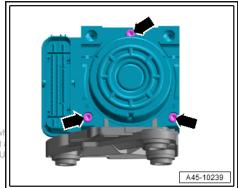
Remove the ABS Control Module - J104- / ABS Hydraulic Unit - N55- . Refer to ⇒ "3.2 ABS Control Module J104 / ABS Hydraulic Unit N55 , Removing and Installing", page 26 .



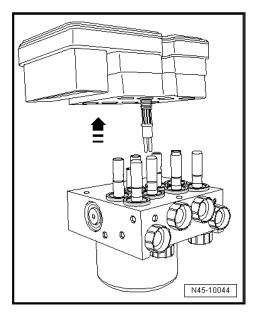
There is a risk of destroying the control module through the electrostatic charge and reduced cleanliness.

- Discharge electrostatic charge: touch the electro-static discharge work surface
- Protect the inner control module from moisture and dirt.
- Touch a grounded object before working on electrical equipment ESD Work Surface VAS 6613-. Do not touch the connector terminals or electronic components directly.
- Position the hydraulic unit with the control module on the ESD Work Surface - VAS 6613- .
- Remove the bolts -arrows- for the control module and dispose of them.
- Position the hydraulic unit with the control module from upward on the ESD Work Surface VAS 6613- .





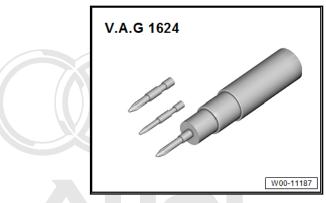
- Pull the control module off from hydraulic unit without tilting.
- Cover the control module solenoid coils with a lint-free cloth.
- Check the cleanliness of the hydraulic unit sealing surface, if necessary clean with mineral spirits and a lint-free cloth.



3.4 Control Module, Installing on Hydraulic Unit

Special tools and workshop equipment required

◆ Torque Screwdriver - V.A.G 1624-



♦ ESD Work Surface - VAS 6613-



♦ Torx insert T25

Procedure



Risk of damaging the control module through vibrations.

- Protect the control module from knocks and impacts.
- Never use a control module if it was dropped on the floor.

(I) NOTICE

There is a risk of destroying the control module through the electrostatic charge and reduced cleanliness.

- Discharge electrostatic charge: touch the electro-static discharge work surface
- Protect the inner control module from moisture and dirt.



Note

- ♦ Do not use aggressive cleaning solutions.
- Check the sealing surface for damage (visual check).
- Surfaces must be cleaned before assembling.
- Place the control module it onto hydraulic unit without tilting



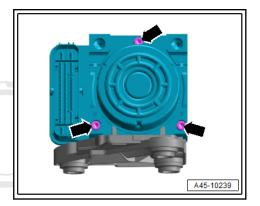
Note

The hydraulic unit threads cannot be re-cut to secure the control module. If the threads are damaged (bolts are difficult to install by hand or the bolts cannot be tightened to the tightening specification), the hydraulic unit must be replaced.

- Tighten the hydraulic unit and control module with the supplied new bolts -arrows- switching back and forth in two steps to the tightening specification.
- Install the ABS Control Module J104- / ABS Hydraulic Unit
 N55- . Refer to ⇒ "3.2 ABS Control Module J104 / ABS Hydraulic Unit N55 , Removing and Installing", page 26 .

Tightening Specifications

Refer to ⇒ "3.1 Overview - Control Module and Hydraulic Unit", page 21





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4 Sensors

- ⇒ "4.1 Overview Front Axle Speed Sensor", page 41
- ⇒ "4.2 Overview Rear Axle Speed Sensor", page 41
- ⇒ "4.3 Right and Left Front ABS Wheel Speed Sensor G45 / G47, Removing and Installing", page 43
- ⇒ "4.4 Right and Left Rear ABS Wheel Speed Sensor G44 / G46, Removing and Installing", page 44
- ⇒ "4.5 ABS Sensor Ring, Checking", page 45

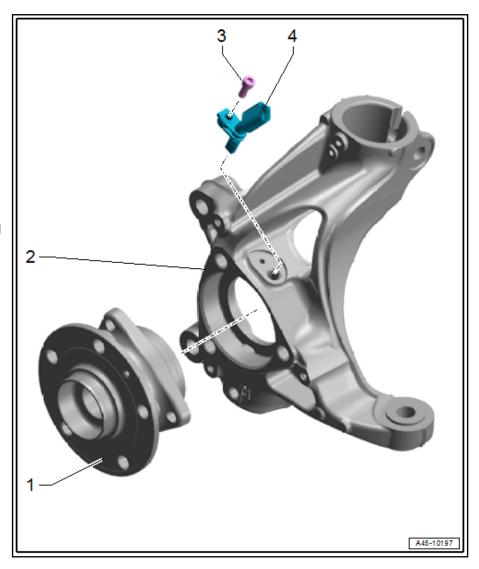
4.1 Overview - Front Axle Speed Sensor

1 - Wheel Hub with Wheel Bearing

- The sensor ring for the ABS is located on the wheel bearing
- \square Refer to \Rightarrow "4.5 ABS Sensor Ring, Checking", page 45
- 2 Wheel Bearing Housing
- 3 Bolt
 - □ 8 Nm

4 - Front Speed Sensor

- ☐ Right Front ABS Wheel Speed Sensor - G45- / Left Front ABS Wheel Speed Sensor - G47-
- ☐ Refer to ⇒ "4.3 Right and Left Front ABS Wheel Speed Sensor G45 / G47, Removing and Installing", page <u>43</u>



4.2 Overview - Rear Axle Speed Sensor

- ⇒ "4.2.1 Overview Rear Axle Speed Sensor, FWD Vehicles", page 41
- ⇒ "4.2.2 Overview Rear Axle Speed Sensor, AWD Vehicles", page 42

4.2.1 Overview - Rear Axle Speed Sensor, FWD Vehicles

1 - Wheel Hub with Wheel Bearing

- ☐ The sensor ring for the ABS is located on the wheel bearing
- Refer to ⇒ "4.5 ABS Sensor Ring, Checking", page 45

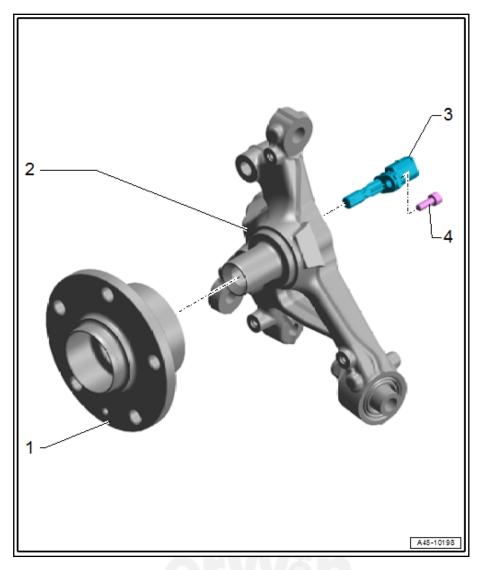
2 - Wheel Bearing Housing

3 - Rear Speed Sensor

- ☐ Right Rear ABS Wheel Speed Sensor - G44- / Left Rear ABS Wheel Speed Sensor - G46-
- Refer to ⇒ "4.4 Right and Left Rear ABS Wheel Speed Sensor G44 / G46 , Removing and Installing", page 44

4 - Bolt

□ 8 Nm



4.2.2 Overview - Rear Axle Speed Sensor, AWD Vehicles

1 - Wheel Bearing Unit

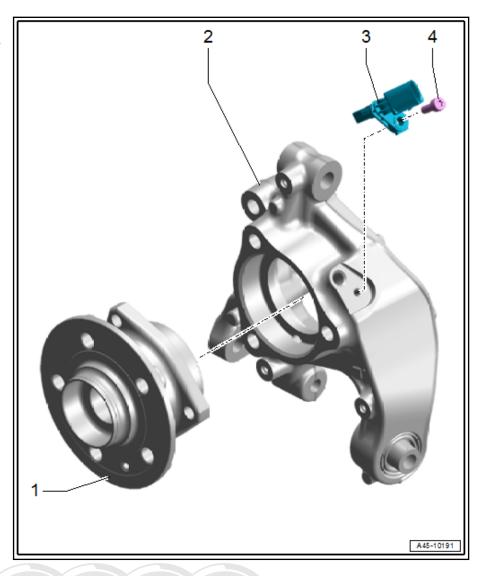
- The ABS sensor ring is installed in the wheel bearing
- □ Refer to ⇒ "4.5 ABS Sensor Ring, Check-<u>ing", page 45</u>
- 2 Wheel Bearing Housing

3 - Speed Sensor

- ☐ Right Rear ABS Wheel Speed Sensor - G44- / Left Rear ABS Wheel Speed Sensor - G46-
- □ Refer to ⇒ "4.4 Right and Left Rear ABS Wheel Speed Sensor G44 / G46 , Removing and Installing", page

4 - Bolt

□ 8 Nm



4.3 Right and Left Front ABS Wheel Speed Sensor -G45- / -G47-, Removing and Installing

Special tools and workshop equipment required

 Polycarbamide Grease . Refer to ⇒ Electronic Parts Catalog (ETKA).

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Removing

- Disconnect the connector -2- from the speed sensor.
- Remove the bolt -1- and remove the speed sensor from the wheel bearing housing.

Installing

Install in reverse order of removal while noting the following:

- Clean the inner surface of the hole before inserting the speed sensor.
- Coat the speed sensor all around with Polycarbamide Grease at the same time omit the top of the sensor.
- Insert the speed sensor all the way by hand and tighten.

Tightening Specifications

 Refer to ⇒ "4.1 Overview - Front Axle Speed Sensor", page 41

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4.4 Right and Left Rear ABS Wheel Speed correctness of information in this document. Copyright by AUDI AG. Sensor -G44- / -G46-, Removing and Installing

Special tools and workshop equipment required

 Polycarbamide Grease . Refer to ⇒ Electronic Parts Catalog (ETKA) .

Removing

FWD Vehicles:

- Disconnect the connector -2- from the speed sensor.
- Remove the bolt -1- and remove the speed sensor from axle stub.

A45-10242

AWD Vehicles:

- Disconnect the connector -2- from the speed sensor.
- Remove the bolt -1- and remove the speed sensor from the wheel bearing housing.

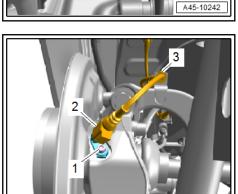
Installing

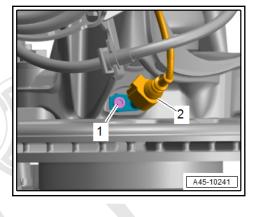
Install in reverse order of removal while noting the following:

- Clean the inner surface of the hole before inserting the speed sensor.
- Coat the speed sensor all around with Polycarbamide Grease at the same time omit the top of the sensor.
- Insert the speed sensor all the way by hand and tighten.

Tightening Specifications

Refer to ⇒ "4.2 Overview - Rear Axle Speed Sensor", page 41

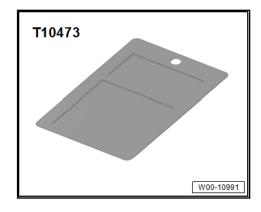




ABS Sensor Ring, Checking 4.5

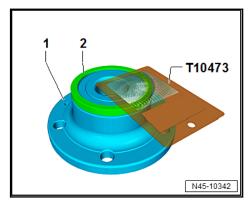
Special tools and workshop equipment required

♦ Gauge - Sender Wheel - T10473-



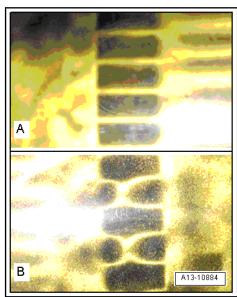
Procedure

- Removing the wheel bearing unit. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40; Wheel Bearing; Wheel Bearing Unit, Removing and Installing or ⇒ Suspension, Wheels, Steering; Rep. Gr. 42; Wheel Bearing, Trailing Arm; Wheel Bearing Unit, Removing and Installing.
- Check the sensor ring for the ABS speed sensor using the Gauge - Sender Wheel - T10473- as shown all around.
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- Seal with Integrated Sensor Ring for ABS Speed Sensor



Sensor ring for ABS speed sensor test diagram.

- A Sensor Ring OK
- B Sensor Ring Faulty



46 – Mechanical Components

1 Front Brakes

- ⇒ "1.1 Overview Front Brakes", page 46
- ⇒ "1.2 Brake Pads, Removing and Installing", page 53
- ⇒ "1.3 Brake Caliper, Removing and Installing", page 64
- ⇒ "1.4 Brake Caliper, Replacing", page 71
- ⇒ "1.5 Brake Carrier, Removing and Installing", page 83
- ⇒ "1.6 Brake Rotor, Removing and Installing", page 84
- ⇒ "1.7 Brake Shield, Removing and Installing", page 85

1.1 Overview - Front Brakes

- ⇒ "1.1.1 Overview Front Brakes, Single-Piston Brake", page 46
- ⇒ "1.1.2 Overview Front Brakes, Four-Piston Brake", page 48
- ⇒ "1.1.3 Overview Front Brakes, Eight-Piston Brake", page 50

1.1.1 Overview - Front Brakes, Single-Piston Brake

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6.



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1 - Brake Caliper

- Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA) .
- Do not disconnect the brake hose when replacing a brake pad
- ☐ Refer to <u>⇒ "1.3.1 Brake</u> Caliper, Removing and Installing, Single-Piston Brake", page 64
- □ Refer to ⇒ "1.4.1 Brake Caliper, Replacing, Single-Piston Brake", page
- □ Servicing. Refer to ⇒ 1.2.1 Brake Caliper Piston, Removing and Installing, Single-Piston Brake", page 118

2 - Bleed Screw

□ 11 Nm

3 - Protective Cap

4 - Bolt

- Self-locking
- Replace after removing
- □ 35 Nm

5 - Dust Protector

□ Replace if damaged

6 - Guide Pin

Check ease of movement

7 - Wheel Bearing Housing

8 - Bolt

□ 200 Nm

9 - Banjo Bolt

- Permanent with seals
- Clean any corrosion from the sealing surface on the brake caliper
- ☐ If damaged, replace the brake hose
- □ 35 Nm

10 - Brake Hose

- ☐ Make sure the brake hose is routed correctly. Make sure the brake hose is not pinched, bent, twisted Protected by enovight. Conving for private of commercial purposes, in part or in whole, is not permitted by the part of the protection of the permitted by the protection of t
- Replace if damaged of information in this document. Copyright by AUDI AG.
- ☐ Make sure that tabs are properly seated in the grooves on the bracket.

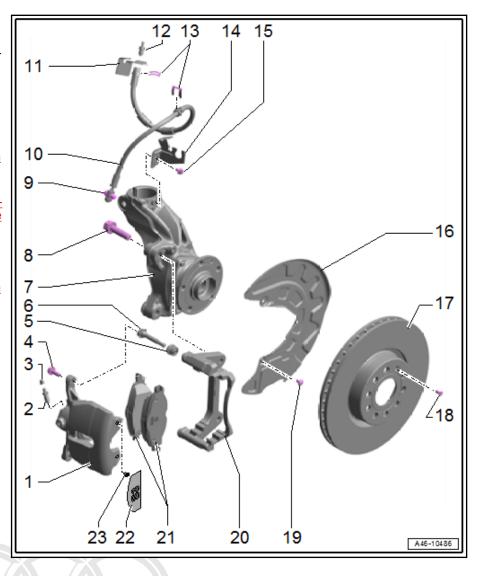
11 - Bracket

- ☐ For the brake line/hose
- On the body

12 - Brake Line

☐ To the brake hose: 14 Nm

13 - Springs



	Replace if damaged
14 - Bracket	

☐ For the brake line/hose

15 - Bolt

□ 8 Nm

16 - Brake Shield

□ Refer to ⇒ "1.7 Brake Shield, Removing and Installing", page 85

17 - Brake Rotor

- □ Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA).
- Refer to ⇒ "5.5.1 Brake Rotor, Checking, Steel Brakes", page 9
- Wear limit specified on the brake rotor
- Always replace on both sides of the axle.
- ☐ When replacing the brake rotors, also replace the brake pads.
- Refer to ⇒ "1.6.1 Brake Rotor, Removing and Installing, Steel Brakes", page 84

18 - Bolt

□ 8 Nm

19 - Bolt

□ 12 Nm

20 - Brake Carrier

□ Refer to ⇒ "1.5 Brake Carrier, Removing and Installing", page 83

21 - Brake Pads

- □ Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA).
- With right front brake pad wear sensor
- □ Check the pad thickness. For the wear simil of seferator deline ance to Booklet a 826 and Maintenance Procedures; Brake Pads, Checking Thickness comes of information in this document. Copyright by AUDI AG.
- □ Always replace on both sides of the axle.
- □ Refer to ⇒ "1.2.1 Brake Pads, Removing and Installing, Single-Piston Brake", page 53
- ☐ Refer to ⇒ Fig. ""Installation position of the brake pads."", page 48

22 - Not Installed

23 - Not Installed

Installation position of the brake pads.

Meaning of the letters -arrows-:

H, Q, BS, CV, = Left and Right Outer Brake Pad

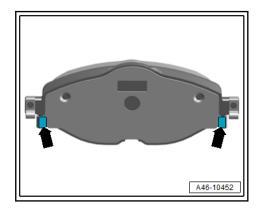
BI or EA

X, O, BT, CW, = Left Inner Brake Pad

BJ or EB

Y, P, BU, CX, = Right Inner Brake Pad

BK or BU



1.1.2 Overview - Front Brakes, Four-Piston Brake

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6.

1 - Brake Pads

- Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA).
- Check the pad thickness. For the wear limit. Refer to ⇒ Maintenance; Booklet 826; Maintenance Procedures: Brake Pads, Checking Thickness .
- □ Always replace on both sides of the axle.

Refer to ⇒ "1.2.2 Brake Pads, Removing and Installing, Four-Piston Brake", page <u>57</u>

2 - Brake Pad Wear Sensor Cable

3 - Bolt

□ 5 Nm

4 - Brake Rotor

- Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA).
- ☐ Refer to ⇒ "5.5.1 Brake Rotor, Checking, Steel Brakes", page 9
- Wear limit specified on the brake rotor
- Always replace on both sides of the axle.
- When replacing the brake rotors, also replace the brake pads.
- Refer to ⇒ "1.6.1 Brake Rotor, Removing and Installing, Steel Brakes", page 84

5 - Retaining Plate

- Quantity: four installed in the brake caliper
- □ Installation position. Refer to ⇒ Fig. ""Retaining plates in the inner brake caliper:"", page 50.

6 - Bleed Screw

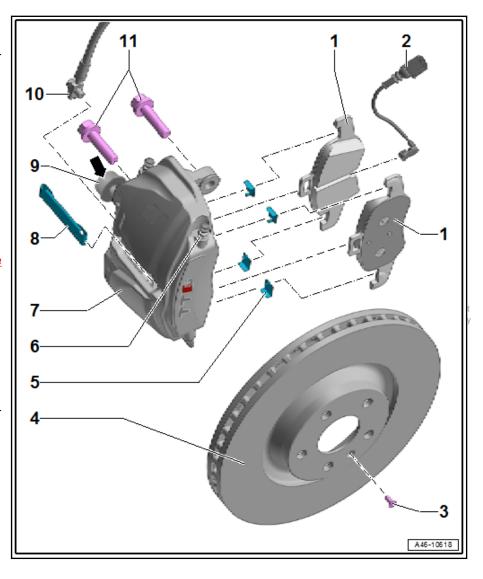
- Quantity: two installed in the brake caliper
- ☐ 11 Nm

7 - Brake Caliper

- ☐ Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA).
- ☐ Do not disconnect the brake hose when replacing a brake pad
- □ Refer to ⇒ "1.3.2 Brake Caliper, Removing and Installing, Four-Piston Brake", page 66
- □ Refer to ⇒ "1.4 Brake Caliper, Replacing", page 71
- □ Servicing, Refer to ⇒ "1.2.2 Brake Caliper Piston, Removing and Installing, Multiple-Piston Brakes", page 121.

8 - Retaining Plate

- For brake pads
- ☐ Installation position. Refer to ⇒ Fig. ""Retaining plate for the brake pads on the brake caliper rear side:"", page 50.



9 - Balance Weight

- Cleaning the contact surface
- □ 10 Nm

10 - Brake Hose

- With banjo bolt
- Permanent with seals
- ☐ Clean any corrosion from the sealing surface on the brake caliper
- □ 45 Nm

11 - Bolts

□ 200 Nm

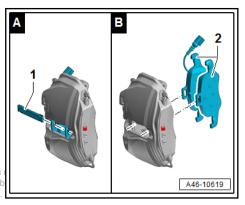
Retaining plates in the inner brake caliper:

- ♦ All four retaining plates must be installed as shown on the contact surfaces for the brake pads.
- Note the correct installation position of the retaining plates.
- The narrow small tab points to the inside of the brake caliper.
- Check for the correct installation position after each removal and before installing the brake pads.

Retaining plate for the brake pads on the brake caliper rear side:

- ◆ The retaining plate suspension is located underneath and engages in the brake caliper mount.
- ♦ The retaining plate must be pushed through the mounts on both brake pads.
- ♦ The retaining plate must lock audibly and noticeably in the mount in the brake caliper.
- Make sure the installation position is correct after every removal / installation rof the brake caliper and after the installation rof the brake pads rised by AUDI AG. AUDI AG does not guarantee or accept any liat with respect to the correctness of information in this document. Copyright by AUDI AG.

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1.1.3 Overview - Front Brakes, Eight-Piston Brake

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6.

1 - Brake Pad Springs

- Replace when replacing the pads
- Make sure they are seated correctly in the brake caliper

2 - Bracket

for brake hose

3 - Bolt

□ 8 Nm

4 - Brake Hose

- Make sure the brake hose is routed correctly. Make sure the brake hose is not pinched, bent, twisted or rubbing against the vehicle.
- □ Replace if damaged
- Make sure that tabs are properly seated in the grooves on the bracket.
- ☐ Tightening specification: brake hose to brake caliper, 15 Nm

5 - Spring

Protect Dby Replace if Idamaged or comment

ermitted unless authorised by AUDI AG. AUDI AC 6th r**Bracket**e correctness of information in

for brake hose

7 - Brake Line

□ Brake line to brake hose tightening specification: 14 Nm

8 - Spring

Replace if damaged

9 - Bolt

□ 200 Nm

10 - Wheel Bearing Housing

11 - Bracket

For brake hose and wire

12 - Bolt

□ 8 Nm

13 - Brake Shield

□ Refer to ⇒ "1.7 Brake Shield, Removing and Installing", page 85

14 - Bolt

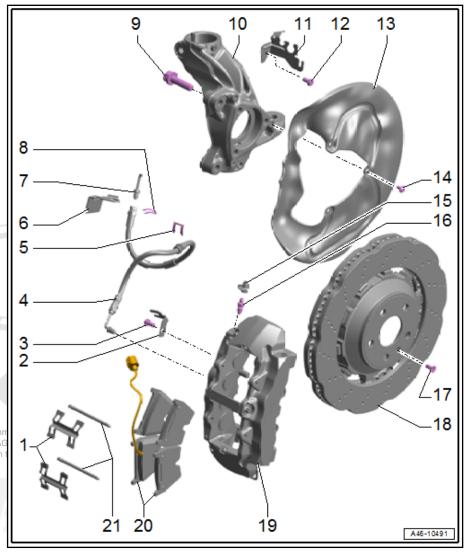
□ 12 Nm

15 - Protective Cap

16 - Bleed Screw

□ 11 Nm

17 - Bolt



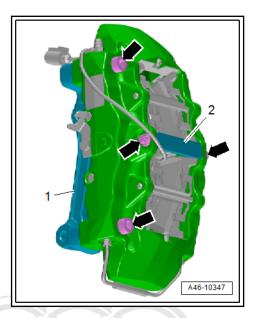
	8 Nm	
18 - E	Brake Rotor	
	Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA) .	
	Wear limit specified on the brake rotor	
Steel Brake Rotors		
	Refer to ⇒ "5.5.1 Brake Rotor, Checking, Steel Brakes", page 9	
	Always replace on both sides of the axle.	
	When replacing the brake rotors, also replace the brake pads.	
	Refer to ⇒ "1.6.1 Brake Rotor, Removing and Installing, Steel Brakes", page 84	
Cera	mic Brake Rotors	
	Refer to ⇒ "5.5.2 Brake Rotors, Checking, Ceramic Brakes", page 11	
	Replace the damaged or worn brake rotor individually, not on both sides of the axle	
	If only one brake rotor is replaced, the brake pads can be reused, if they do not show any damages.	
	Pay attention to the side of the vehicle specified on the brake rotor "L"/"R" and the running direction "arrow"	
	Refer to ⇒ "1.6.2 Brake Rotor, Removing and Installing, Ceramic Brakes", page 84	
19 - E	Brake Caliper	
	Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA) .	
	Do not disconnect the brake hose when replacing a brake pad	
	Refer to ⇒ Fig. ""Do not loosen the threaded connection -arrows- for the brake caliper/brake caliper -1-and the tension strut -2- "", page 53	
	Refer to ⇒ Fig. ""Overview - Balance Weight"", page 53	
	Refer to ⇒ "1.3.3 Brake Caliper, Removing and Installing, Eight-Piston Brake", page 68	
	Refer to ⇒ "1.4 Brake Caliper, Replacing", page 71	
	Servicing. Refer to ⇒ "1.2.2 Brake Caliper Piston, Removing and Installing, Multiple-Piston Brakes", page 121.	
20 - E	Brake Pads	
	Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA) .	
	Check the pad thickness. For the wear limit. Refer to ⇒ Maintenance ; Booklet 826 ; Maintenance Procedures; Brake Pads, Checking Thickness .	
	Always replace on both sides of the axle.	
	Pay attention to the installation position: inner right brake pad with brake pad wear sensor	
	Removing and Installing. Refer to <u>⇒ "1.2 Brake Pads, Removing and Installing", page 53</u> .	
21 - E	Brake Pad Pins	
	Replace when replacing the pads	
	Note the installation position	
	Drive out from the outside toward the inside tected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.	

Do not loosen the threaded connection -arrows- for the brake caliper/brake caliper -1- and the tension strut -2-



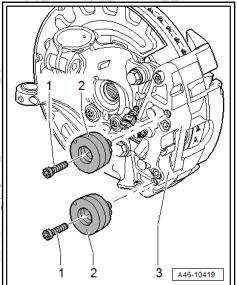
Improper handling increases the risk of destroying the brake caliper.

Never loosen the threaded connection on the brake caliper.



Overview - Balance Weight

- 1 Bolt
- ♦ 10 Nm
- 2 Balance Weight
- ♦ Steel brakes, quantity 2
- ♦ Ceramic brakes, quantity 1
- ♦ Clean the contact surface to the brake caliper
- 3 Balance Weight
- ♦ Clean the contact surface to the brake caliper fected by copyright. Copying for permitted unless authorised by Al with respect to the correctness



1.2 Brake Pads, Removing and Installing

⇒ "1.2.1 Brake Pads, Removing and Installing, Single-Piston Brake", page 53

⇒ "1.2.2 Brake Pads, Removing and Installing, Four-Piston Brake", page 57

⇒ "1.2.3 Brake Pads, Removing and Installing, Eight-Piston Brake", page 59

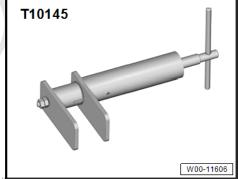
11-1211-1

1.2.1 Brake Pads, Removing and Installing, Single-Piston Brake

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6.

Special tools and workshop equipment required

Piston Resetting Tool - T10145-



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♦ Grease . Refer to the stock to Electronic Parts Catalog (ETKA) Copyright by AUDI AG.

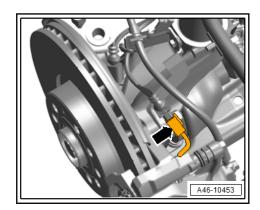
Removing



Note

Label the brake pads when removing if they are going to be used again. Install in the same position, otherwise the braking effect will be uneven.

- Remove the affected front wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- Connect the connector -arrow- for the brake pad wear indicator contact on the right brake caliper.



- Remove the bolts -arrows- by counterholding at the guide pins -1 and 2-.
- Remove the brake caliper.

NOTICE

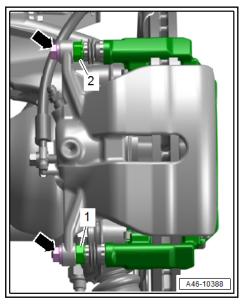
There is a risk of damaging the brake hose due to the weight of the brake caliper.

- Never let the brake caliper hang on the brake hose.
- Hang the brake caliper using a suitable wire.



There is a risk of damaging the brake caliper piston if handled incorrectly.

- Never activate the brakes if the brake caliper is removed.
- Remove the brake pads.



Remove the springs -2- from the brake carrier -1-.

Installing

Install in reverse order of removal while noting the following:

Check the brake rotors for wear and damage. Refer to
 <u>"5.5.1 Brake Rotor, Checking, Steel Brakes"</u>, page 9



Note

- ♦ Use the complete repair kit when installing new brake pads at or in wh
- Components to be used when installing new brake pads pyright by AU Refer to ⇒ Electronic Parts Catalog (ETKA).

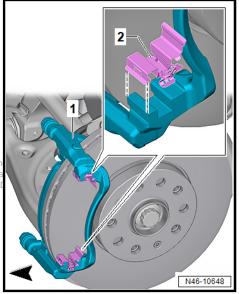


WARNING

Health risk due to toxic dust from the brake system.

Irreversible deposit of dust particles in the lungs. Breathing impairments may occur.

Never blow out the brake system with compressed air.





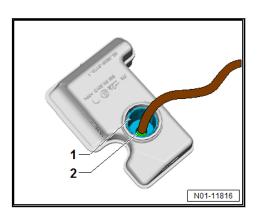
Note

- ♦ Use only mineral spirits to clean the brake caliper.
- ♦ Check the protective caps of the brake caliper pistons for damage and install the complete repair kit, if necessary. Refer to ⇒ "1.2.1 Brake Caliper Piston, Removing and Installing, Single-Piston Brake", page 118.
- ◆ Check the dust protectors of the guide pins for damage and check that the guide pins move easily. Install the complete repair kit, if necessary. Refer to ⇒ "1.3 Dust Protectors and Guide Pins, Replacing", page 124.

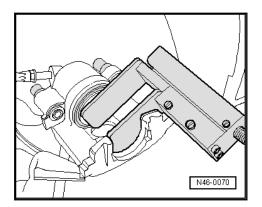
NOTICE

There is a risk of contamination and paint damage from leaking brake fluid.

- Check the brake fluid level before pushing the brake caliper piston back into the brake cylinders.
- If the brake fluid is up to the "MAX" marking on used brake pads, it must be extracted.
- Evacuate the brake fluid -2- in the brake fluid reservoir with the screen installed -1-, using the Brake Filling and Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit -VAS 5234- (example illustration).



 Use the Piston Resetting Tool - T10145- to press the brake caliper piston completely back into the brake caliper.



- Clean the brake carrier -1- on the contact surface -2- for the brake carrier and coat thinly with Grease.
- If equipped, remove the protective film from the backing plate of the brake pad.
- If re-using, install the marked brake pads in the same location.



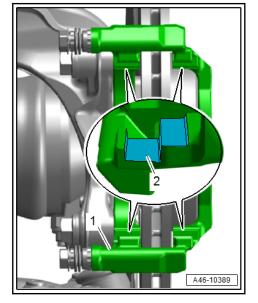
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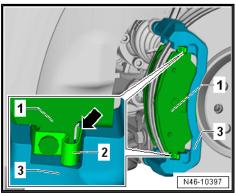
 Place the brake pads -1- with the springs -2- into the brake carrier opening -3- at the same time pay attention to the installation position. Refer to ⇒ Fig. ""Installation position of the brake pads."", page 48.



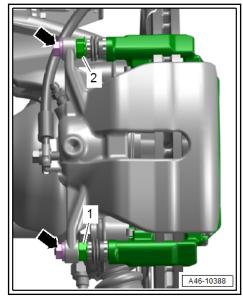
Note

After installing the brake pads, ensure the proper seating of all springs -2-.





- Push the brake caliper over the installed brake pads.
- Tighten the brake caliper bolts -arrows- to the required tightening specification by counterholding at the guide pins -1 and 2-.
- Make sure the brake hose is routed correctly.
- Make sure the brake hose is not pinched, bent, twisted or rubbing against the vehicle.



- Connect the connector -arrow- for the brake pad wear indicator contact on the right brake caliper.
- With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly sit in their respective position.
- Check brake fluid level, and fill if necessary.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

 Refer to ⇒ "1.1.1 Overview - Front Brakes, Single-Piston Brake", page 46

1.2.2 Brake Pads, Removing and Installing, Four-Piston Brake

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6.

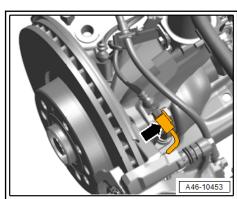
Special tools and workshop equipment required

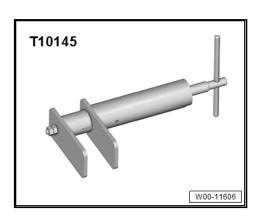
Piston Resetting Tool - T10145-



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Removing



Note

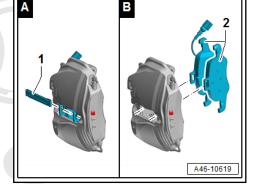
Label the brake pads when removing if they are going to be used again. Install in the same position, otherwise the braking effect will be uneven.

- Remove the brake caliper. Refer to ⇒ "1.3.2 Brake Caliper, Removing and Installing, Four-Piston Brake", page 66.
- Remove the retaining plate -image A: 1- with suitable pliers from the brake caliper, while holding down the brake pads at the same time.
- Remove the brake pads -image B: 1- from the brake caliper.

Installing

Install in reverse order of removal while noting the following:

Check the brake rotors for wear and damage. Refer to
 <u>"5.5.1 Brake Rotor, Checking, Steel Brakes", page 9</u>





Note

- Use the complete repair kit when installing new brake pads to or commercial purposes, in part or in whole, is not
 permitted unless authorised by AUDI AG does not guarantee or accept any liability
- ◆ Components to be used when installing pew brake pads. information in this document. Copyright by AUDI AG.

 Refer to ⇒ Electronic Parts Catalog (ETKA).



WARNING

Health risk due to toxic dust from the brake system. Irreversible deposit of dust particles in the lungs. Breathing impairments may occur.

Never blow out the brake system with compressed air.



Note

- ♦ Use only mineral spirits to clean the brake caliper.
- ◆ Check the protective caps of the brake caliper pistons for damage and install the complete repair kit, if necessary. Refer to ⇒ "1.2.2 Brake Caliper Piston, Removing and Installing, Multiple-Piston Brakes", page 121.



There is a risk of contamination and paint damage from leaking brake fluid.

- Check the brake fluid level before pushing the brake caliper piston back into the brake cylinders.
- If the brake fluid is up to the "MAX" marking on used brake pads, it must be extracted.
- Evacuate the brake fluid -2- in the brake fluid reservoir with the screen installed -1-, using the Brake Filling and Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit -VAS 5234- (example illustration).
- Use the Piston Resetting Tool T10145- to press the brake caliper piston completely back into the brake caliper.
- If equipped, remove the protective film from the backing plate of the brake pad.
- If reusing the old brake pads, install the labeled brake pads in the same location.
- Insert the retaining plate -A- in the brake caliper. Refer to
 ⇒ Fig. ""Retaining plates in the inner brake caliper:"", page

 50.
- Insert brake pads in brake caliper and install the retaining plate. Refer to ⇒ Fig. ""Retaining plate for the brake pads on the brake caliper rear side:" , page 50.
- Install the brake caliper with the brake pads installed. Refer to ⇒ "1.3.2 Brake Caliper, Removing and Installing, Four-Piston Brake", page 66.
- With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly sit in their respective position properly sit in their respective position.
- Check brake fluid level, and fill if necessary.



CAUTION

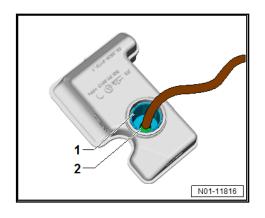
Faulty brakes increase the risk of an accident.

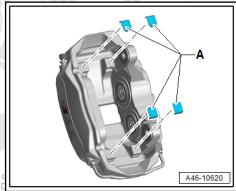
 Make sure the brakes are working correctly before driving the vehicle for the first time.

1.2.3 Brake Pads, Removing and Installing, Eight-Piston Brake

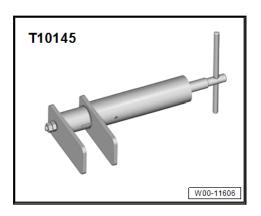
Allocation of the PR number. Refer to <u>⇒ "4.1 Technical Data, Brakes"</u>, page 6.

Special tools and workshop equipment required





Piston Resetting Tool - T10145-



◆ Commercial type punch pin

Removing



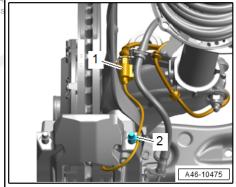
Note

Label the brake pads when removing if they are going to be used again. Install in the same position, otherwise the braking effect will be uneven.

 Remove the affected front wheel, while observing the safety precautions for vehicles equipped with ceramic brakes. Refer to => Suspension, Wheels and Steering; Rep. Gr. 44; Wheels, Tires.

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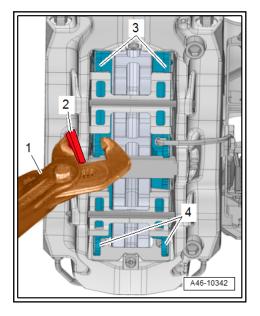
On the right brake caliper disconnect the connection of the brake pad wear sensor and free it up, to do so open the dust cap -2-.





Note

For easier removal of the brake caliper from the brake rotor, push the brake pads -3 and 4- back lightly with pliers -1-. To prevent damage to the coating on the brake caliper, place a piece of rubber -2- or similar between the pliers and brake caliper.





Note

When removing the brake pad pin, make sure that the brake caliper coating is not damaged.



CAUTION

There is a risk of injury because the spring is tensioned. The spring can jump out and cause eye or skin injury.

- Hold the spring with a hand.
- Using a punch, drive the brake pad pins -2 and 6- out of the brake caliper from the outside toward the inside and remove the brake pad springs -1 and 5- (example illustration).
- Remove the brake pads -4 and 7- from the brake caliper.



There is a risk of damaging the brake caliper piston if handled incorrectly.

- Never activate the brakes if the brake pads are removed.

Installing

Install in reverse order of removal while noting the following:

Check the brake rotors for wear and damage. Refer to ⇒
 "5.5 Brake Rotor, Checking", page 9



Note

- ♦ Use the complete repair kit when installing new brake pads.
- ♦ Components to be used when installing new brake pads. Refer to ⇒ Electronic Parts Catalog (ETKA).

A

WARNING

Health risk due to toxic dust from the brake system espect to the correlative resible deposit of dust particles in the lungs. Breathing impairments may occur.

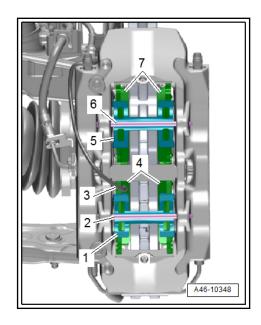
Never blow out the brake system with compressed air.

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Note

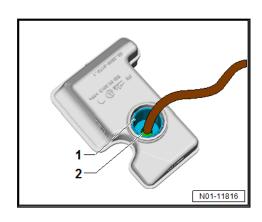
- ♦ Use only mineral spirits to clean the brake caliper.
- ◆ Check the brake piston protective caps for damage and install the entire repair kit, if necessary. Refer to ⇒ "1.2.2 Brake Caliper Piston, Removing and Installing, Multiple-Piston Brakes", page 121.

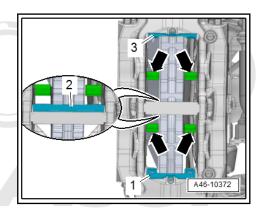


! NOTICE

There is a risk of contamination and paint damage from leaking brake fluid.

- Check the brake fluid level before pushing the brake caliper piston back into the brake cylinders.
- If the brake fluid is up to the "MAX" marking on used brake pads, it must be extracted.
- Evacuate the brake fluid -2- in the brake fluid reservoir with the screen installed -1-, using the Brake Filling and Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit -VAS 5234- (example illustration).
- Use the Piston Resetting Tool T10145- to press the brake piston all the way back into the brake caliper.
- Clean the brake caliper at the contact surfaces -1, 2 and 3to the brake pads and retaining pin -arrows-.





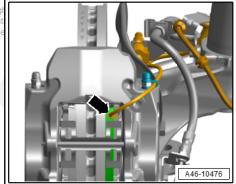
For brake calipers with used brake pads check the wire

 -arrow- for the brake pad wear sensor on the brake caliper unless aut for damage.



Note

If the brake pad wear sensor is damaged, replace the brake pads.



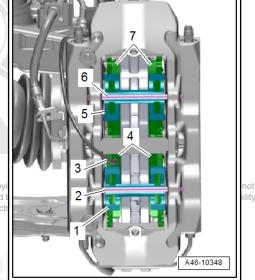
vhole, is not t any liability UDI AG.

- Insert the brake pads -4 and 7- into the brake caliper (example illustration).
- The brake pad with brake pad wear sensor is located on the upper right of the brake caliper and faces toward the inside of the vehicle.
- Press the brake pad springs -1 and 5- down one after the other and drive the brake pad pins -2 and 6- all the way into the brake caliper.



Note

When driving in the brake pad pins, make sure that the brake vright. Copy caliper coating is not damaged. permitted unless authorised with respect to the correct



- Connect the connector -1- on the right brake caliper and secure the wire for the brake pad wear sensor with the dust cap -2-.
- With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly sit in their respective position.
- Check brake fluid level, and fill if necessary.



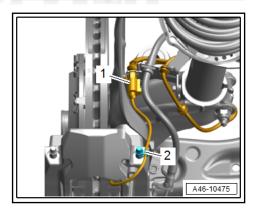
CAUTION

Faulty brakes increase the risk of an accident.

Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

- Refer to ⇒ "1.1.3 Overview Front Brakes, Eight-Piston Brake", page 50
- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires .



1.3 Brake Caliper, Removing and Installing

⇒ "1.3.1 Brake Caliper, Removing and Installing, Single-Piston Brake", page 64

⇒ "1.3.2 Brake Caliper, Removing and Installing, Four-Piston Brake", page 66

⇒ "1.3.3 Brake Caliper, Removing and Installing, Eight-Piston Brake", page 68

1.3.1 Brake Caliper, Removing and Installing, Single-Piston Brake

Allocation of the PR number. Refer to \Rightarrow "4.1 Technical Data, Brakes", page 6.



Note

- In the following description the brake caliper is removed with the brake carrier and brake pads. The brake hose remains connected.
- The brake pads remain installed.

Removing

- Remove the affected front wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- Disconnect the connector -arrow- for the brake pad wear sensor contact on the right brake caliper.

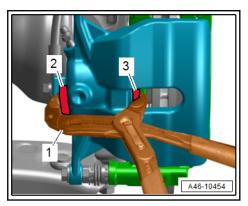
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Note

- ♦ For easier removal of the brake caliper from the brake rotor, push the brake pad -3- back slightly with suitable pliers -1- as shown.
- ◆ To prevent damage to the paint coat on the brake caliper, place a piece of rubber -2- between the pliers and brake caliper.



 Remove the bolts -arrows- and carefully remove the brake caliper with the brake carrier and the installed brake pads from the brake rotor.



There is a risk of damaging the brake hose due to the weight of the brake caliper.

- Never let the brake caliper hang on the brake hose.
- Hang the brake caliper using a suitable wire.



There is a risk of damaging the brake caliper piston if handled incorrectly.

Never activate the brakes if the brake caliper is removed.

Installing

Install in reverse order of removal while noting the following:



Health risk due to toxic dust from the brake system. Irreversible deposit of dust particles in the lungs. Breathing impairments may occur.

- Never blow out the brake system with compressed air.



Note

Use only mineral spirits to clean the brake caliper.

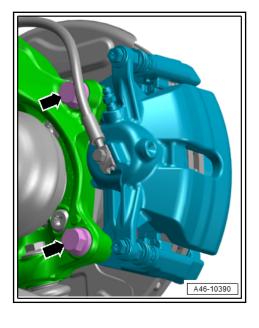
- Clean the brake caliper.
- Carefully slide the brake caliper with the brake carrier and the installed brake pads over the brake rotor.
- Tighten the bolts -arrows-.

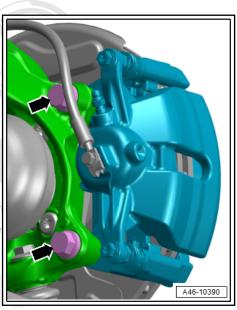


Note

- ♦ Make sure the brake hose is routed correctly.
- Make sure the brake hose is not pinched, bent, twisted or rubbing against the vehicle.

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- Connect the connector -arrow- for the brake pad wear sensor contact on the brake caliper.
- With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly sit in their respective position.
- Check brake fluid level, and fill if necessary.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

- Refer to ⇒ "1.1.1 Overview Front Brakes, Single-Piston Brake", page 46
- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.



Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6.



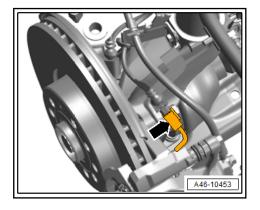
Note

- In the following description the brake caliper is removed with the brake carrier and brake pads. The brake hose remains connected.
- The brake pads remain installed.

Removing

- Remove the affected front wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- Disconnect the connector -arrow- for the brake pad wear sensor contact on the brake caliper.







Note

- For easier removal of the brake caliper from the brake rotor, push the brake pad -3- back slightly with suitable pliers -1as shown.
- ◆ The image is only an example.
- ◆ To prevent damage to the paint coat on the brake caliper, place a piece of rubber -2- between the pliers and brake caliper.
- Remove the bolts -1- for the brake caliper.
- Remove the brake caliper.



There is a risk of damaging the brake hose due to the weight of the brake caliper.

- Never let the brake caliper hang on the brake hose.
- Hang the brake caliper using a suitable wire.



There is a risk of damaging the brake caliper piston if handled incorrectly.

Never activate the brakes if the brake caliper is removed.

Installing

Λ

WARNING

Health risk due to toxic dust from the brake system. Irreversible deposit of dust particles in the lungs. Breathing impairments may occur.

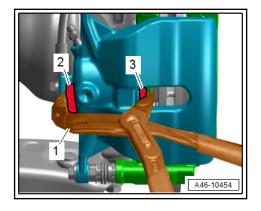
Never blow out the brake system with compressed air.

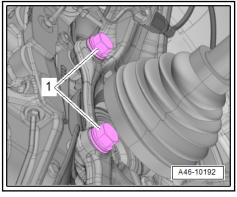


Note

Use only mineral spirits to clean the brake caliper.

- Clean the brake caliper.
- Carefully slide the brake caliper with the brake carrier and the installed brake pads over the brake rotor.







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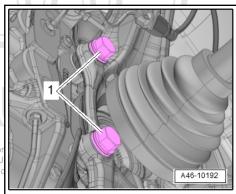
- Tighten the brake caliper with bolts -1-.



Note

- ♦ Make sure the brake hose is routed correctly.
- Make sure the brake hose is not pinched, bent, twisted or rubbing against the vehicle.

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- Connect the connector -arrow- for the brake pad wear sensor contact on the brake caliper.
- With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly sit in their respective position.
- Check brake fluid level, and fill if necessary.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

- Refer to ⇒ "1.1.2 Overview Front Brakes, Four-Piston Brake", page 48
- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

1.3.3 Brake Caliper, Removing and Installing, Eight-Piston Brake

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6.

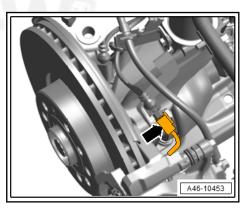


Note

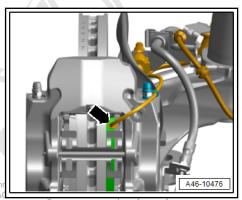
In the following description the brake caliper is removed with the brake pads. The brake hose remains connected.

Removing

 Remove the respective front wheel, while observing the safety precautions for ceramic brakes. Refer to ⇒ Suspension, Wheels and Steering; Rep. Gr. 44; Wheels, Tires.



 Disconnect the connector -arrow- for the brake pad wear sensor on the right brake caliper.



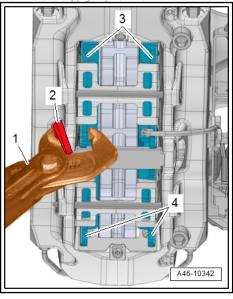
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Note

For easier removal of the brake caliper from the brake rotor, push the brake pads -3 and 4- back lightly with pliers -1-. To prevent damage to the coating on the brake caliper, place a piece of rubber -2- or similar between the pliers and brake caliper.



Unscrew the bolts -arrows- and carefully remove the brake caliper with the brake pads from the brake rotor.



There is a risk of damaging the brake hose due to the weight of the brake caliper.

- Never let the brake caliper hang on the brake hose.
- Hang the brake caliper using a suitable wire.



There is a risk of damaging the brake caliper piston if handled incorrectly.

Never activate the brakes if the brake caliper is removed.

Installing

Install in reverse order of removal while noting the following:



WARNING

Health risk due to toxic dust from the brake system. Irreversible deposit of dust particles in the lungs. Breathing impairments may occur.

Never blow out the brake system with compressed air.



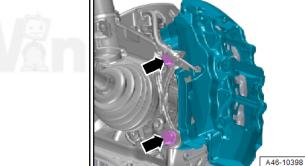
Note

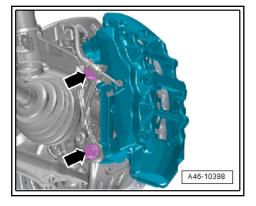
Use only mineral spirits to clean the brake caliper.

- Clean the brake caliper.
- Slide the brake caliper with the brake pads installed carefully over the brake rotor.

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Tighten the bolts -arrowsth respect to the correctness of information in this document. C



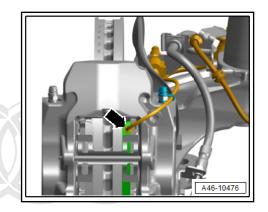


Connect the connector -arrow-.



Note

- Make sure that the connector and brake hose are routed correctly.
- Make sure the brake hose is not blocked, bent, twisted or rubbing against the vehicle.
- With the vehicle stationary, firmly press the brake pedal several times so that the brake pads in the operating condition properly sit in their respective position.
- Check brake fluid level, and fill if necessary.





CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.

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Tightening Specifications

- Refer to ⇒ "1.1.3 Overview Front Brakes, Eight-Piston Brake", page 50
- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

1.4 Brake Caliper, Replacing

⇒ "1.4.1 Brake Caliper, Replacing, Single-Piston Brake", page 71

⇒ "1.4.2 Brake Caliper, Replacing, Four-Piston Brake", page 75

⇒ "1.4.3 Brake Caliper, Replacing, Eight-Piston Brake", page 79

1.4.1 Brake Caliper, Replacing, Single-Piston Brake

Allocation of the PR number. Refer to <u>⇒ "4.1 Technical Data, Brakes", page 6</u>.



Note

The brake caliper is removed and disconnected from the hydraulic system in the following description. The brake hose is removed.

Special tools and workshop equipment required

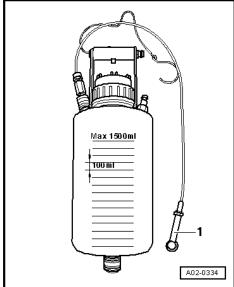
◆ Brake Pedal Actuator - V.A.G 1869/2- .



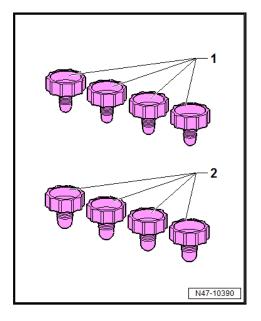
 Collection bottle from the Bleeding Equipment - VAS 6860or Brake Charger/Bleeder Unit - VAS 5234-



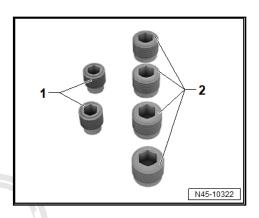
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 Plugs from the Repair Kit - 1H0 698 311 A-: M10 -item 1and M12 -item 2-



 M10 plug -item 1- or M12 -item 2- from the Assembly Part Set - 5Q0 698 311-



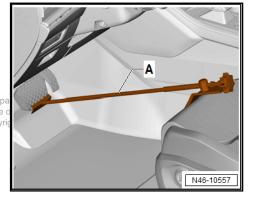
Removing

- Remove the affected front wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- Insert the Brake Pedal Actuator V.A.G 1869/2- -item Abetween the brake pedal and driver seat. Preload the brake pedal at least 60 mm.



Note

By doing this, the valves in the brake master cylinder are closed rantee and the brake fluid reservoir does not run empty mation in this document. Copyr



Remove the protective cap -3- from the bleed screw -1-.



CAUTION

Leaking brake fluid increases the risk of injury. Risk of skin irritation and injury.

- Wear safety gloves.
- Attach the bleeder bottle bleeder hose -2- to the bleed screw.
- Open the bleed screw to reduce the pressure in the hydraulic system.
- Close the bleed screw and remove the bleeder bottle.



Note

Do not remove the Brake Pedal Actuator - V.A.G 1869/2- .

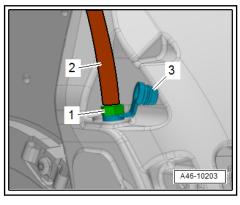
 To protect against escaping brake fluid, place a cloth under the separating point.



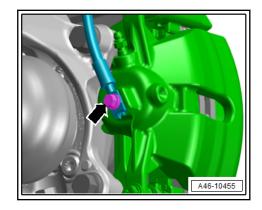
CAUTION

Risk of accident due to the brakes malfunctioning.

- Brake fluid must never come into contact with fluids containing mineral oils (oil, gasoline, cleaning solutions).
- Wear safety gloves that are free of oil and grease.



- Remove the banjo bolt -arrow- and remove the brake hose from the brake caliper.
- Immediately close open connection points with a clean plug.
- Remove the brake pads. Refer to ⇒ "1.2.1 Brake Pads, Removing and Installing, Single-Piston Brake", page 53.



Installing

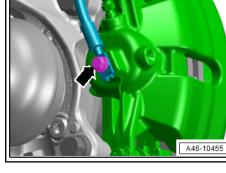
Install in reverse order of removal while noting the following:

- Install the brake pads. Refer to ⇒ "1.2.1 Brake Pads, Removing and Installing, Single-Piston Brake", page 53
- Install the banjo bolt -arrow- in the brake caliper and tighten.



Note

- ◆ Make sure the brake hose is routed correctly.
- ♦ Make sure the brake hose is not blocked, bent, twisted or rubbing against the vehicle.
- Remove the Brake Pedal Actuator V.A.G 1869/2- .





Note

Only bleed the brakes on the wheel from which the brake caliper was removed and the brake line was loosened. If the brake pedal still feels "soft", completely bleed the brakes. Refer to ≥ "6.2 Hydraulic System, Bleeding", page 178.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.



Tightening Specifications

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Refer to ⇒ "1.1.1 Overview - Front Brakes, Single-Piston

Brake" page 46

Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.



Brake Caliper, Replacing, Four-Piston 1.4.2

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6



Note

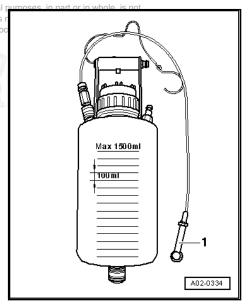
The brake caliper is removed and disconnected from the hydraulic system in the following description. The brake hose is removed.

Special tools and workshop equipment required

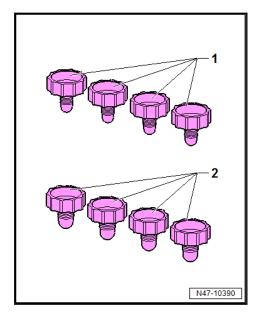
♦ Brake Pedal Actuator - V.A.G 1869/2-



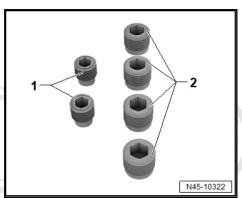
Collection bottle from the Bleeding Equipment by AS 6860 AG does or Brake Charger/Bleeder Unit in VAS 5234 orrectness of information in this do



Plugs from the Repair Kit - 1H0 698 311 A-: M10 -item 1and M12 -item 2-



 M10 plug -item 1- or M12 -item 2- from the Assembly Part Set - 5Q0 698 311-



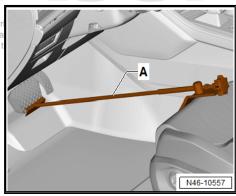
Removing

- Remove the affected front wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- Insert the Brake Pedal Actuator V.A.G 1869/2- -item A-between the brake pedal and driver seat. Preload the brake by copyr pedal at least 60 mm.



Note

By doing this, the valves in the brake master cylinder are closed and the brake fluid reservoir does not run empty.



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- Remove the protective cap -3- from the bleed screw -1-.
- Attach the bleeder bottle bleeder hose -2- to the bleed screw.
- Open the bleed screw to reduce the pressure in the hydraulic system.
- Close the bleed screw and remove the bleeder bottle.



Do not remove the Brake Pedal Actuator - V.A.G 1869/2-.

To protect against escaping brake fluid, place a cloth under the separating point.



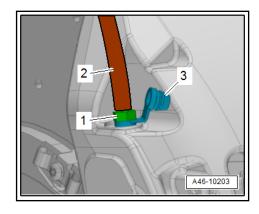
CAUTION

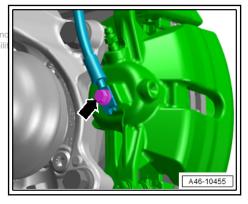
Risk of accident due to the brakes malfunctioning.

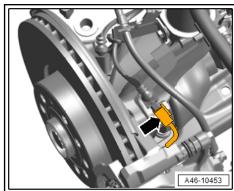
- Brake fluid must never come into contact with fluids containing mineral oils (oil, gasoline, cleaning solutions).
- Wear safety gloves that are free of oil and grease.
- Remove the banjo bolt -arrow- and remove the brake hose from the brake caliper (example illustration).
- Immediately close open connection points with a clean plug any liabi with respect to the correctness of information in this document. Copyright by AUDI AG.



Disconnect the connector -arrow- for the brake pad wear sensor contact on the brake caliper.









- ◆ For easier removal of the brake caliper from the brake rotor, push the brake pad -3- back slightly with suitable pliers -1as shown.
- The image is only an example.
- ◆ To prevent damage to the paint coat on the brake caliper, place a piece of rubber or similar object -2- between the pliers and brake caliper.
- Remove the bolts -1- for the brake caliper.
- Remove the brake caliper.
- Remove the brake pads. Refer to ⇒ "1.2.2 Brake Pads, Removing and Installing, Four-Piston Brake", page 57

Installing

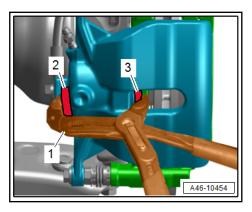
Install in reverse order of removal while noting the following:

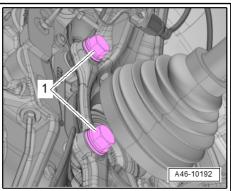
- Install the brake pads. Refer to ⇒ "1.2.2 Brake Pads, Removing and Installing, Four-Piston Brake", page 57.
- Slide the brake caliper with the brake pads installed carefully over the brake rotor.
- Tighten the brake caliper with bolts -1-.

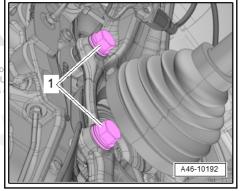


Note

- ♠ Make sure the brake hose is routed correctly ermitted unless authorised by A
- Make sure the brake hose is not pinched, bent, twisted or rubbing against the vehicle.







- Connect the connector -arrow- for the brake pad wear sensor contact on the brake caliper.
- Remove the Brake Pedal Actuator V.A.G 1869/2- .



Only bleed the brakes on the wheel from which the brake caliper was removed and the brake line was loosened. If the brake , pedal still feels "soft", completely bleed the brakes.Refer to ≥ "6.2 Hydraulic System, Bleeding", page 178



CAUTION

Faulty brakes increase the risk of an accident.

- Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

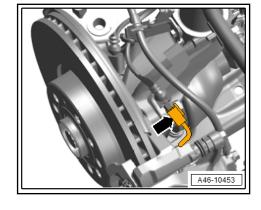
- Refer to ⇒ "1.1.2 Overview Front Brakes, Four-Piston Brake", page 48
- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires .

1.4.3 Brake Caliper, Replacing, Eight-Piston

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6. Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not

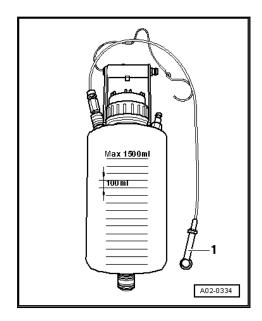
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♦ Brake Pedal Actuator - V.A.G 1869/2- .

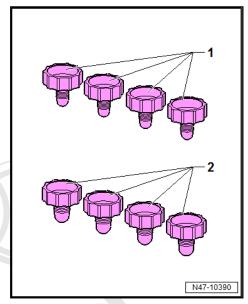




 Collection bottle from the Bleeding Equipment - VAS 6860or Brake Charger/Bleeder Unit - VAS 5234-

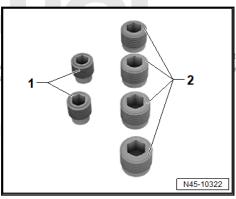


 Plugs from the Repair Kit - 1H0 698 311 A-: M10 -item 1and M12 -item 2-



 M10 plug -item 1- or M12 -item 2- from the Assembly Part Set - 5Q0 698 311-





Removing

 Remove the affected front wheel, while observing the safety precautions for vehicles equipped with ceramic brakes. Refer to ⇒ Suspension, Wheels and Steering; Rep. Gr. 44; Wheels, Tires. Insert the Brake Pedal Actuator - V.A.G 1869/2- -item Abetween the brake pedal and driver seat. Preload the brake pedal at least 60 mm.



Note

By doing this, the valves in the brake master cylinder are closed and the brake fluid reservoir does not run empty.

- Remove the protective cap -3- from the bleed screw -1-.



CAUTION

Leaking brake fluid increases the risk of injury. Risk of skin irritation and injury.

- Wear safety gloves.
- Connect the bleeder bottle hose -2- as shown.
- Open the bleed screw to reduce the pressure in the brake system.
- Close the bleed screw and remove the bleeder bottle.



Note

Do not remove the Brake Pedal Actuator - V.A.G 1869/2-.

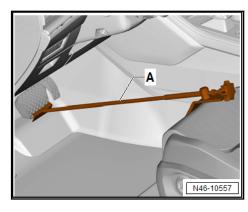


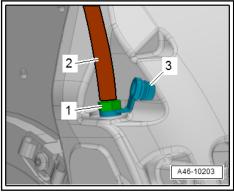
Note

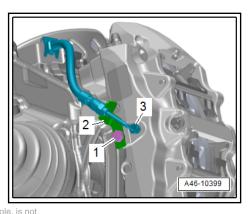
Place a cloth underneath to catch any brake fluid leaking out.

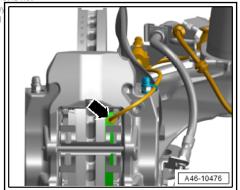
- Remove the union bolt -3- and bolt -1-.
- Remove the bracket -2- and move the brake hose to the
- Immediately close the open brake caliper with plugs.

Protected by copyright. Copying for private or commercial purposes, in part or in who Disconnectethe connector arrows for the brake pad weare or accept an cument. Copyright by AUD sensor on the right brake caliper of information in this do





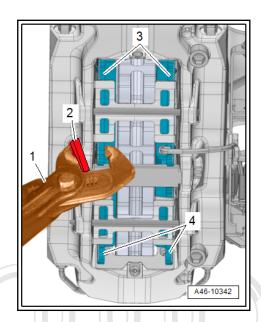


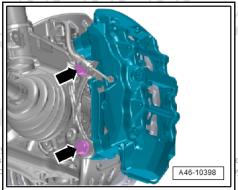




For easier removal of the brake caliper from the brake rotor, push the brake pads -3 and 4- back lightly with pliers -1-. To prevent damage to the coating on the brake caliper, place a piece of rubber -2- or similar between the pliers and brake caliper.

- Unscrew the bolts -arrows- and carefully remove the brake caliper with the brake pads from the brake rotor.
- Remove the brake pads. Refer to ⇒ "1.2.3 Brake Pads, Removing and Installing, Eight-Piston Brake", page 59





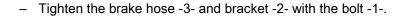
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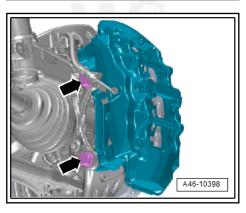
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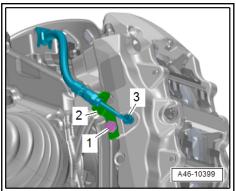
Installing

Install in reverse order of removal while noting the following:

- Bring the brake caliper into its installed position and tighten the bolts -arrows-.
- Install the brake pads. Refer to ⇒ "1.2.3 Brake Pads, Removing and Installing, Eight-Piston Brake", page 59







Connect the connector -arrow-.



Note

- Make sure that the connector and brake hose are routed correctly.
- Make sure the brake hose is not pinched, bent, twisted or rubbing against the vehicle.
- Remove the Brake Pedal Actuator V.A.G 1869/2- .



Note

Only bleed the brakes on the wheel from which the brake caliper was removed and the brake line was loosened. If the brake pedal still feels "soft", completely bleed the brakes.Refer to ≥ 6.2 Hydraulic System i Bleeding In page of 78 es, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



CAUTION

Faulty brakes increase the risk of an accident.

Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

- Refer to ⇒ "1.1.3 Overview Front Brakes, Eight-Piston
- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires .

1.5 Brake Carrier, Removing and Installing

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6.

Removing

- Remove the brake pads. Refer to ⇒ "1.2.1 Brake Pads, Removing and Installing, Single-Piston Brake", page 53
- Remove the bolts -arrows- and remove the brake carrier -1-.

Installing

Install in reverse order of removal while noting the following:



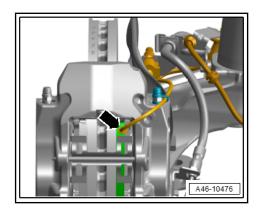
Note

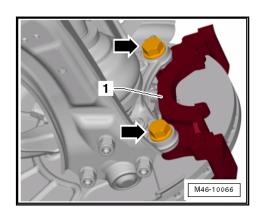
Only use mineral spirits to clean the brake carrier.

Install the brake pads. Refer to ⇒ "1.2.1 Brake Pads, Removing and Installing, Single-Piston Brake", page 53.

Tightening Specifications

Refer to ⇒ "1.1.1 Overview - Front Brakes, Single-Piston Brake", page 46





1.6 Brake Rotor, Removing and Installing

⇒ "1.6.1 Brake Rotor, Removing and Installing, Steel Brakes", page 84

⇒ "1.6.2 Brake Rotor, Removing and Installing, Ceramic Brakes", page 84

1.6.1 Brake Rotor, Removing and Installing, Steel Brakes

Removing

- Remove the affected brake caliper. Refer to ⇒ "1.3 Brake Caliper, Removing and Installing", page 64
- Remove the bolt -arrow- and remove the brake rotor.
- Do not loosen the brake rotor from the hub by prying.
- · Do not remove the brake rotor from the hub with a hammer.
- If the connection cannot be separated, use rust remover.

Installing

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permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any Install in reverse; order of the movals while moting the following right by AUDI AG.

- Check the brake rotors for wear and damage before reusing them. Refer to ⇒ "5.5.1 Brake Rotor, Checking, Steel Brakes", page 9
- Thoroughly clean the brake rotor and hub contact surfaces and clear them of corrosion.
- Place the brake rotor on the wheel hub.



Note

Do not tilt the brake rotor when mounting it on the wheel hub.

- Tighten the bolt -arrow-.
- Install the brake caliper. Refer to ⇒ "1.3 Brake Caliper, Removing and Installing", page 64



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

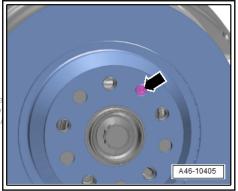
Refer to ⇒ "1.1 Overview - Front Brakes", page 46

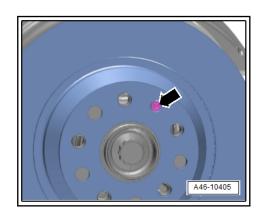
1.6.2 Brake Rotor, Removing and Installing, Ceramic Brakes

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6.

Removing

 Remove the brake caliper. Refer to ⇒ "1.3.3 Brake Caliper, Removing and Installing, Eight-Piston Brake", page 68.





- Remove the bolt -1- and remove the brake rotor by hand. Do not use any tools.
- Do not drop the brake rotor.
- Do not loosen the brake rotor from the hub by prying.
- Do not remove the brake rotor from the hub with a hammer.
- · If the connection cannot be separated, use rust remover.

If the brake rotor is seized, do the following:

- Install two M8 bolts -arrows- all the way into the threaded holes of the brake rotor.
- Tighten the bolts ¹/₂ turn farther alternating from side to side to loosen the brake rotor from the wheel hub.

Installing

Install in reverse order of removal while noting the following:

- Before reusing ceramic brake rotors check for wear and damage. Refer to ⇒ "5.5.2 Brake Rotors, Checking, Ceramic Brakes", page 11
- Thoroughly clean the brake rotor and hub contact surfaces and clear them of corrosion.
- Place the brake rotor on the wheel hub.



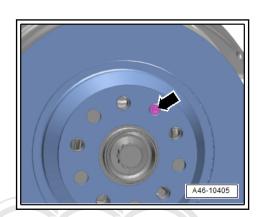
Note

Do not tilt the brake rotor when mounting it on the wheel hub.

- Tighten the bolt -arrow-.
- Install the brake caliper. Refer to ⇒ "1.3.3 Brake Caliper, Removing and Installing, Eight-Piston Brake", page 68.

Tightening Specifications

 Refer to ⇒ "1.1.3 Overview - Front Brakes, Eight-Piston Brake", page 50



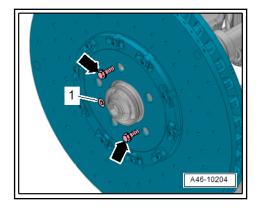
1.7 Brake Shield, Removing and Installing

Removing

Remove the affected brake rotor. Refer to ⇒ "1.6 Brake Rotor, Removing and Installing", page 84.



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- Remove the bolts -arrows-.
- Remove the brake shield -1-.

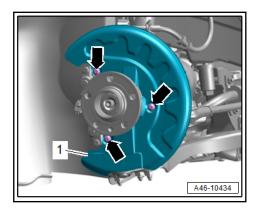
Installing

Install in reverse order of removal while noting the following:

- Clean the brake shield and the wheel hub.
- Install the brake rotor. Refer to ⇒ "1.6 Brake Rotor, Removing and Installing", page 84.

Tightening Specifications

◆ Refer to ⇒ "1.1 Overview - Front Brakes", page 46





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2 **Rear Brakes**

- ⇒ "2.1 Overview Rear Brakes", page 87
- ⇒ "2.2 Brake Pads, Removing and Installing", page 89
- ⇒ "2.3 Brake Caliper, Removing and Installing", page 94
- ⇒ "2.4 Brake Caliper, Replacing", page 97
- ⇒ "2.5 Brake Carrier, Removing and Installing", page 100
- ⇒ "2.6 Brake Rotor, Removing and Installing", page 101
- ⇒ "2.7 Brake Shield, Removing and Installing", page 102

2.1 **Overview - Rear Brakes**

Allocation of the PR number. Refer to ⇒ "4.1 Technical Data, Brakes", page 6



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1 - Brake Line

☐ 14 Nm

2 - Bracket

- □ For the brake line/hose
- On the body

3 - Spring

□ Replace if damaged

4 - Brake Hose

Make sure it is in the installation position

5 - Bleed Screw

☐ 11 Nm

6 - Protective Cap

7 - Seal

□ Replace after removing

8 - Bolt

□ 8 Nm

9 - Parking Brake Motor copyright.

Refer to 3 1 Orless author view - Parking Brake , page 103

10 - Cap

☐ For the guide pins

11 - Guide Pin

□ 35 Nm

12 - Wheel Bearing Housing

13 - Bolt

- □ Replace after removing
- □ 90 Nm + 90°

14 - Brake Shield

□ Refer to ⇒ "2.7 Brake Shield, Removing and Installing", page 102

15 - Brake Rotor

- ☐ Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA).
- ☐ Refer to ⇒ "5.5.1 Brake Rotor, Checking, Steel Brakes", page 9
- Wear limit specified on the brake rotor
- ☐ Always replace on both sides of the axle.
- ☐ When replacing the brake rotors, also replace the brake pads.
- Refer to ⇒ "2.6 Brake Rotor, Removing and Installing", page 101

16 - Bolt

☐ 12 Nm

17 - Bolt

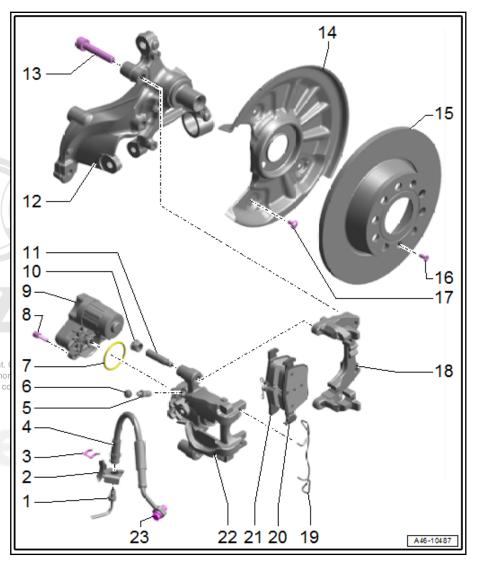
□ 8 Nm

18 - Brake Carrier

□ Refer to ⇒ "2.5 Brake Carrier, Removing and Installing", page 100

19 - Spring

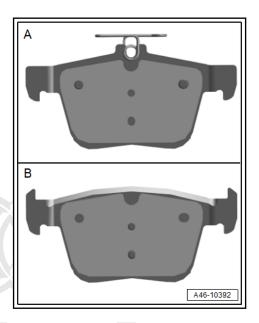
20 - Outer Brake Pad



	Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA).
	Check the pad thickness. For the wear limit. Refer to ⇒ Maintenance ; Booklet 826 ; Maintenance Procedures; Brake Pads, Checking Thickness .
	Refer to ⇒ "2.2 Brake Pads, Removing and Installing", page 89
	Always replace on both sides of the axle.
	Refer to ⇒ Fig. ""Installation position of the brake pads."", page 89
21 - Inner Brake Pad	
	Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA) .
	With spring
	Check the pad thickness. For the wear limit. Refer to \Rightarrow Maintenance ; Booklet 826 ; Maintenance Procedures; Brake Pads, Checking Thickness .
	Refer to ⇒ "2.2 Brake Pads, Removing and Installing", page 89
	Always replace on both sides of the axle.
	Refer to ⇒ Fig. ""Installation position of the brake pads."", page 89
22 - Brake Caliper	
	Allocation. Refer to the ⇒ Electronic Parts Catalog (ETKA) .
	Do not remove the brake hose when changing the brake pads.
	Refer to ⇒ "2.3 Brake Caliper, Removing and Installing", page 94
	Refer to ⇒ "2.4 Brake Caliper, Replacing", page 97
	Servicing. Refer to ⇒ "2.2 Dust Cap, Removing and Installing", page 125.
23 - Banjo Bolt	
	Permanent with seals
	Clean any corrosion from the sealing surface on the brake caliper
	35 Nm

Installation position of the brake pads.

- A Inner Brake Pad on Piston Side
- B Outer Brake Pad
- Make sure that the spring sits in the backing plate on the inner brake pad.



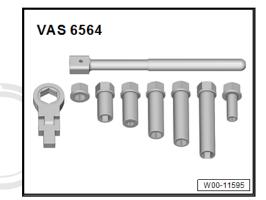
2.2 Brake Pads, Removing and Installing

Special tools and workshop equipment required

- ♦ Vehicle Diagnostic Tester
- ♦ Bit Holder Insert Short (5 pcs) VAS 262 013/12 dected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
- ♦ Bit Insert, 7 mm, 5/16" VAS 262 025-

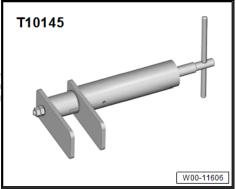
89

 Tool Holder - VAS 6564/2- from Brake Bleeding Tool Set -VAS 6564A-



Piston Resetting Tool - T10145-





◆ Grease . Refer to the ⇒ Electronic Parts Catalog (ETKA) .

Removing



Note

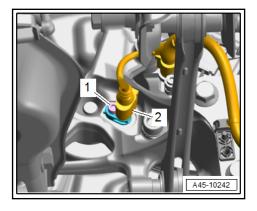
- Label the brake pads when removing if they are going to be used again. Install in the same position, otherwise the braking effect will be uneven.
- Do not disconnect the connectors from the parking brake motors.
- Release the parking brake.
- Switch off the ignition.
- Remove the affected rear wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- To replace the brake pads, drive the parking brake motors rearward using the program "brake pads, removing". Refer to <u>⇒</u> "6.1 Diagnostic Entries", page 16
- Continue to follow the instructions in the Vehicle Diagnostic Tester display.

 Disconnect the connector -2- from the Right Rear ABS Wheel Speed Sensor - G44- / Left Rear ABS Wheel Speed Sensor - G46- and free up the wire.



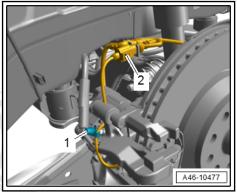
Note

The installation position illustrated is for a FWD vehicle.



Vehicles with 2.5L TFSI engine

 Disconnect and free up the connector -2- for the brake pad wear sensor by opening the dust cap -1-.



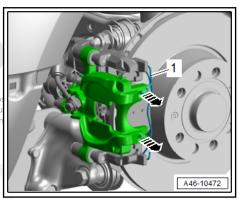
Continuation for All Vehicles:



CAUTION

There is a risk of injury because the spring is tensioned. The spring can jump out and cause eye or skin injury.

- Hold the spring with a handled by copyright. Copying for private or commercial purpor
 Hold the spring with a handled unless authorised by AUDI AG. AUDI AG does not go
- Pry out the spring -1- for the brake pads from the brake caliper -arrows- using for example a screwdriver, while doing so hold the spring by hand.



- Remove the caps -2 and 3-.
- Remove the guide pin -1- with Tool Holder VAS 6564/2-, Bit Holder Insert - Short (5 pcs) - VAS 262 013/12- and Bit Insert, 7 mm, 5/16" - VAS 262 025-.



There is a risk of damaging the brake hose due to the weight of the brake caliper.

- Never let the brake caliper hang on the brake hose.
- Hang the brake caliper using a suitable wire.



There is a risk of damaging the brake caliper piston if handled incorrectly.

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 Never activate the brakes if the brake caliper is removed. AG does not guarantee or accept any liability
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- Remove the brake pads.

Installing

Install in reverse order of removal while noting the following:

Check the brake rotors for wear and damage. Refer to ⇒
 "5.5.1 Brake Rotor, Checking, Steel Brakes", page 9



Note

- ◆ Use the complete repair kit when installing new brake pads.
- ♦ Components to be used when installing new brake pads. Refer to ⇒ Electronic Parts Catalog (ETKA).



WARNING

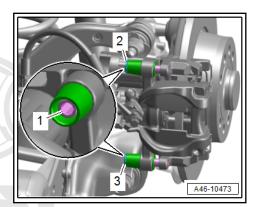
Health risk due to toxic dust from the brake system. Irreversible deposit of dust particles in the lungs. Breathing impairments may occur.

Never blow out the brake system with compressed air.



Note

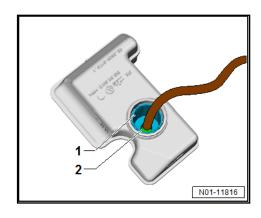
- Use only mineral spirits to clean the brake caliper.
- ◆ Check the protective caps of the brake caliper pistons for damage and install the complete repair kit, if necessary. Refer to ⇒ "1.2 Brake Caliper Piston, Removing and Installing", page 118.
- ◆ Check the bearing bushings of the guide pins for damage and check that the guide pins move easily. Install the complete repair kit, if necessary. Refer to ⇒ "2.3 Bearing Bushing and Guide Pin, Replacing", page 127.

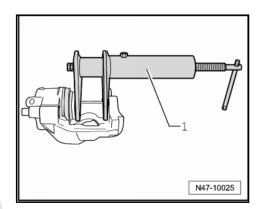




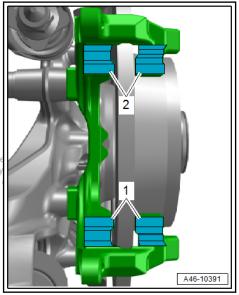
There is a risk of contamination and paint damage from leak-

- Check the brake fluid level before pushing the brake caliper piston back into the brake cylinders.
- If the brake fluid is up to the "MAX" marking on used brake pads, it must be extracted.
- Evacuate the brake fluid -2- in the brake fluid reservoir with the screen installed -1-, using the Brake Filling and Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit -VAS 5234- (example illustration).
- Use the Piston Resetting Tool T10145- -item 1- to completely press back the piston.

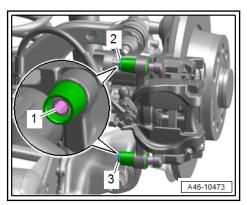




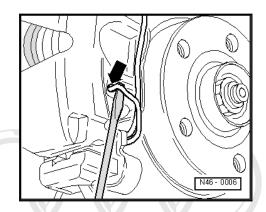
- Clean the brake carrier on the contact surface -1 and 2- for the brake carrier and coat thinly with Grease.
- If equipped, remove the protective film from the backing plate of the brake pad.
- If re-using, install the marked brake pads in the same loca-
- Insert the brake pads into the brake carrier, while paying attention to the installation position. Refer to ⇒ Fig. "Installation position of the brake pads."", page 89.
- Insert the protested by appyright. Copying for private or commercial purposes, in part or in who praked cares of the protest and the protest of the protest with respect to the correctness of information in this document. Copyright by AUD



- Screw in and tighten the guide pin -1- with Tool Holder -VAS 6564/2- , Bit Holder Insert - Short (5 pcs) - VAS 262 013/12- and Bit Insert, 7 mm, 5/16" - VAS 262 025- .
- Push on the caps -2 and 3-.



- Insert the spring for the brake pads into the brake caliper -arrow-.
- Make sure that the spring is seated correctly in the holes on the brake caliper.

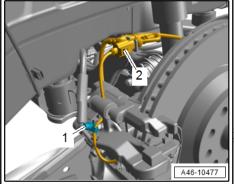


Vehicles with 2.5L TFSI engine

 Connect the connector -2- and secure the wire for the brake pad wear sensor with the dust cap -1-.

Continuation for All Vehicles:

- Complete the program "Brake Pads, Removing" using the
 ⇒ Vehicle diagnostic tester.
- With the vehicle stationary, firmly press the brake pedal sev by copyring eral times so that the brake pads in the operating condition and unless at properly sit in their respective position.
- Check brake fluid level, and fill if necessary.



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A CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

- ♦ Refer to ⇒ "2.1 Overview Rear Brakes", page 87
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

2.3 Brake Caliper, Removing and Installing

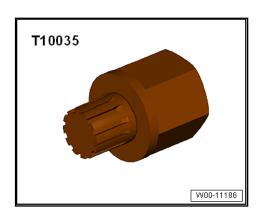


Note

In the following description the brake caliper is removed with the brake carrier and brake pads. The brake hose remains connected.

Special tools and workshop equipment required

♦ Multipoint Socket - T10035-



Removing

- Release the parking brake.
- Switch off the ignition.



Note

Do not disconnect the connectors from the parking brake motors.

 Remove the affected rear wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

Vehicles with 2.5L TFSI engine

- Disconnect the brake pad wear sensor connector -2-.



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Continuation for All Vehicles:

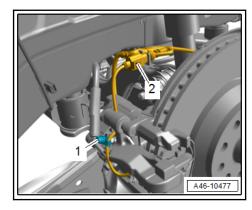
- Disconnect the connector -1- from the Right Rear ABS Wheel Speed Sensor - G44- / Left Rear ABS Wheel Speed Sensor - G46- .
- Remove the brake carrier bolts -arrows- using the Multipoint Socket PT10035 Copyright. Copying for private or commercial purposes, in part or in whole, in permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any lie

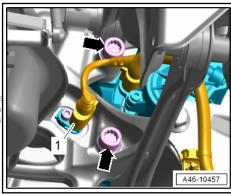


Note

The installation position illustrated is for a FWD vehicle.

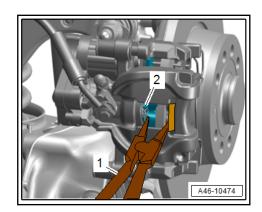
 Remove the brake caliper with the brake carrier and installed brake pads from the brake rotor.







- ♦ AWD vehicles: reset the parking brake motor using the "brake pads, removing" program (refer to ⇒ "6.1 Diagnostic Entries", page 16) and reset the brake pads.
- ◆ FWD vehicles: if the brake rotor is so worn that the brake caliper cannot be removed then reset the parking brake motors using the "brake pads, removing" program. Refer to ⇒ "6.1 Diagnostic Entries", page 16.
- For easier removal of the brake caliper from the brake rotor, push the brake pad -2- back lightly with suitable pliers -1-, as shown.
- ♦ To prevent damage to the paint coat on the brake caliper, place a piece of rubber between the pliers and brake caliper.



! NOTICE

There is a risk of damaging the brake hose due to the weight of the brake caliper.

- Never let the brake caliper hang on the brake hose.
- Hang the brake caliper with the brake carrier using suitable wire.



There is a risk of damaging the brake caliper piston if handled incorrectly.

- Never activate the brakes if the brake caliper is removed.

Installing

Install in reverse order of removal while noting the following:



WARNING

Health risk due to toxic dust from the brake system. Irreversible deposit of dust particles in the lungs. Breathing impairments may occur.

Never blow out the brake system with compressed air.





Note

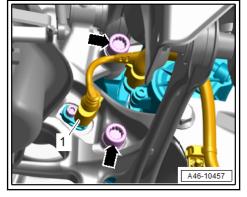
Use only mineral spirits to clean the brake caliper.

 Carefully slide the brake caliper with the brake carrier and the installed brake pads over the brake rotor.

- Tighten the new brake carrier bolts -arrows-.
- Connect the connector -1-.



- ♦ Make sure that the wire and brake hose are routed correctly.
- Make sure the brake hose is not blocked, bent, twisted or rubbing against the vehicle.



Vehicles with 2.5L TFSI engine

- Connect the brake pad wear sensor connector -2-.

Continuation for All Vehicles:

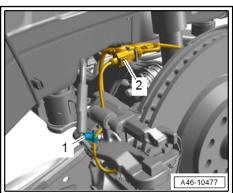
 Complete the program "Brake Pads, Removing" using the ⇒ Vehicle diagnostic tester.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.



Tightening Specifications

- Refer to ⇒ "2.1 Overview Rear Brakes", page 87
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

2.4 Brake Caliper, Replacing



Note

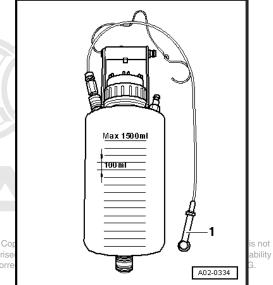
The brake caliper is removed and disconnected from the hydraulic system in the following description. The brake hose is removed.

Special tools and workshop equipment required

♦ Brake Pedal Actuator - V.A.G 1869/25y-copyright. Copying for private or commer permitted unless authorised by AUDI AG. AUDI AG with respect to the correctness of information in this

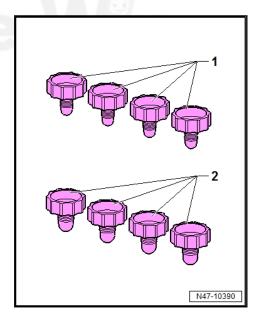


 Collection bottle from the Bleeding Equipment - VAS 6860or Brake Charger/Bleeder Unit - VAS 5234-

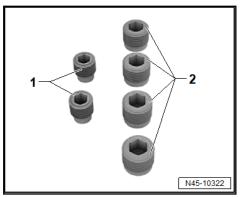


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Plugs from the Repair Kit - 1H0 698 311 A-: M10 -item 1and M12 -item 2-



♦ M10 plug -item 1- or M12 -item 2- from the Assembly Part Set - 5Q0 698 311-



Removing

- Release the parking brake.
- Switch off the ignition.

Insert the Brake Pedal Actuator - V.A.G 1869/2- -item Abetween the brake pedal and driver seat. Preload the brake pedal at least 60 mm.



Note

By doing this, the valves in the brake master cylinder are closed and the brake fluid reservoir does not run empty.

Remove the affected rear wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.



CAUTION

Leaking brake fluid increases the risk of injury. Risk of skin irritation and injury.

- Wear safety gloves.
- Remove the protective cap -3- from the bleed screw -1- on the left front caliper.
- Connect the bleeder bottle hose -2- as shown.
- Open the bleed screw to reduce the pressure in the brake Protected by copyright. Copying for private or commerci permitted unless authorised by AUDI AG. AUDI AG doe system.
- Close the bleed screw and remove the bleeder bottle information in this of
- Repeat the procedure on the left rear brake caliper.



Note

Do not remove the Brake Pedal Actuator - V.A.G 1869/2- .

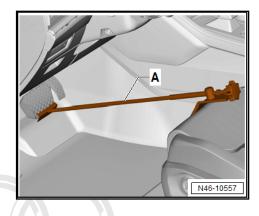
- Remove the bolts -arrows- for the parking brake motor.
- Remove the parking brake motor and set it aside without disconnecting the connector -1-.

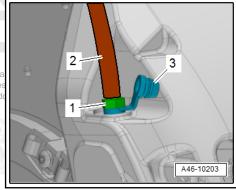


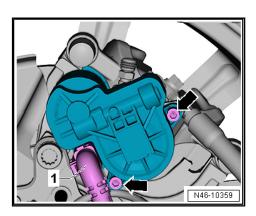
CAUTION

Risk of accident due to the brakes malfunctioning.

- Brake fluid must never come into contact with fluids containing mineral oils (oil, gasoline, cleaning solutions).
- Wear safety gloves that are free of oil and grease.







- Remove the brake hose banjo bolt -arrow- on the brake caliper.
- Immediately close open connection points with a clean plug.
- Remove the brake pads. Refer to ⇒ "2.2 Brake Pads, Removing and Installing", page 89.

Installing

Install in reverse order of removal while noting the following:

- Install the brake pads. Refer to ⇒ "2.2 Brake Pads, Removing and Installing", page 89.
- Install the electro-mechanical parking brake motor. Refer to ⇒ "3.2 Left and Right Parking Brake Motor V282 / V283 , Removing and Installing", page 104 .
- Tighten the brake hose banjo bolt -arrow- on the brake caliper.



Note

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- ♦ Wake sure the brake hose is routed correctly right by AUDI AG.
- Make sure the brake hose is not blocked, bent, twisted or rubbing against the vehicle.
- Remove the Brake Pedal Actuator V.A.G 1869/2- .



Note

Only bleed the brakes on the wheel from which the brake caliper was removed and the brake line was loosened. If the brake pedal still feels "soft", completely bleed the brakes. Refer to <u>⇒</u> "6.2 Hydraulic System, Bleeding", page 178.

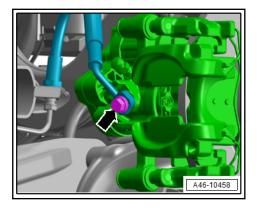
Tightening Specifications

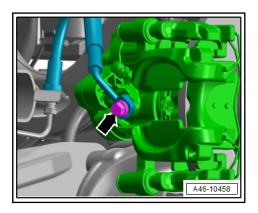
- Refer to ⇒ "2.1 Overview Rear Brakes", page 87
- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

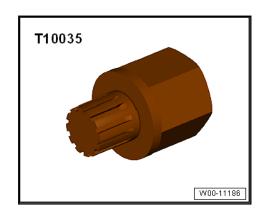
2.5 Brake Carrier, Removing and Installing

Special tools and workshop equipment required

♦ Multipoint Socket - T10035-







A46-10459

Removing

- Remove the brake pads. Refer to ⇒ "2.2 Brake Pads, Removing and Installing", page 89.
- Remove the bolts -arrows- using the Multipoint Socket -T10035- and remove the brake carrier -1-.



Note

The installation position illustrated is for a FWD vehicle.

Installing

Install in reverse order of removal while noting the following:



Note

Only use mineral spirits to clean the brake carrier.

Install the brake pads. Refer to ⇒ "2.2 Brake Pads, Removing and Installing", page 89.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.



Tightening Specifications

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◆ Refer to ⇒ "2.1 Overview - Rear Brakes", page 87

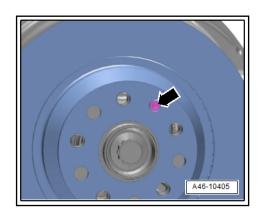
2.6 Brake Rotor, Removing and Installing

Removing

- Remove the brake caliper. Refer to ⇒ "2.3 Brake Caliper, Removing and Installing", page 94.
- Remove the bolt -arrow- and remove the brake rotor.
- · Do not loosen the brake rotor from the hub by prying.
- Do not remove the brake rotor from the hub with a hammer.
- If the connection cannot be separated, use rust remover.

Installing

- Check the brake rotors for wear and damage before reusing them. Refer to ⇒ "5.5.1 Brake Rotor, Checking, Steel Brakes", page 9.
- Thoroughly clean the brake rotor and hub contact surfaces and clear them of corrosion.
- Place the brake rotor on the wheel hub.



- Tighten the bolt -arrow-.
- Install the brake caliper. Refer to ⇒ "2.3 Brake Caliper, Removing and Installing", page 94



CAUTION

Faulty brakes increase the risk of an accident.

Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

Refer to ⇒ "2.1 Overview - Rear Brakes", page 87

2.7 Brake Shield, Removing and Installing

Removing

Remove the brake rotor. Refer to ⇒ "2.6 Brake Rotor, Removing and Installing", page 101.

Vehicles with closed brake shield:

Remove the wheel bearing unit. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42; Wheel Bearing, Trailing Arm; Wheel Bearing Unit, Removing and Installing.

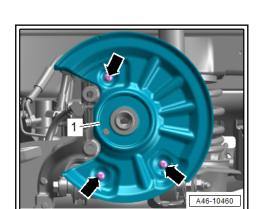
Continuation for All Vehicles:

Remove the bolts -arrows- and remove the brake shield -1-.

Installing

Install in reverse order of removal while noting the following:

- Clean the contact surfaces on the brake shield and wheel
- Install and tighten the brake shield bolts.
- Install the wheel bearing unit. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42; Wheel Bearing, Trailing Arm; Wheel Bearing Unit, Removing and Installing.
- Install the brake rotor. Refer to <u>⇒ "2.6 Brake Rotor, Remov-</u> ing and Installing", page 101.



A46-10405



CAUTION

Faulty brakes increase the risk of an accident.

Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

Refer to ⇒ "2.1 Overview - Rear Brakes", page 87



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3 Parking Brake

- ⇒ "3.1 Overview Parking Brake", page 103
- \Rightarrow "3.2 Left and Right Parking Brake Motor V282 / V283 , Removing and Installing", page 104
- ⇒ "3.3 Parking Brake, Manually Loosening", page 105

3.1 Overview - Parking Brake



Note

Due to a mechanical or electrical malfunction, the parking brake may need to be released manually in order to move the vehicle. Refer to \Rightarrow "3.3 Parking Brake, Manually Loosening", page 105.

1 - Rear Brake Caliper

2 - Seal

Replace after removing

3 - Bolt

□ 8 Nm

4 - Parking Brake Motor

- Left Parking Brake Motor - V282-
- ☐ Right Parking Brake Motor V283-
- Refer to ⇒ "3.2 Left and Right Parking Brake Motor V282 / V283 , Removing and Installing", page 104

5 - ABS Control Module -J104-

☐ The control for the electro-mechanical parking brake is integrated in the ABS Control Module - J104-

pellitie Refer to siss 12 AABS. AUD with recentral Modules of 04 plate ABS Hydraulic Unit N55, Removing and Installing", page 26

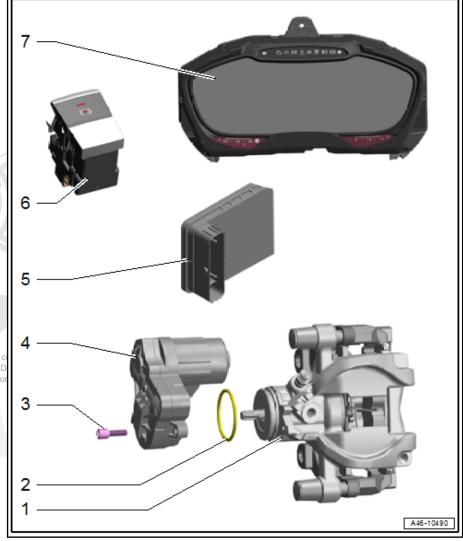
6 - Electromechanical Parking Brake Button - E538-

- With Electromechanical Parking Brake Indicator Lamp - K213-
- Component location, removing and installing.

Refer to ⇒ Electrical Equipment; Rep. Gr. 96 ; Controls; Component Location Overview - Controls in the Center Console .

7 - Instrument Cluster

□ With the Brake System Indicator Lamp - K118-



3.2 Left and Right Parking Brake Motor -V282- / -V283- , Removing and Installing

Special tools and workshop equipment required

- Vehicle Diagnostic Tester
- Lubricating Grease . Refer to ⇒ Electronic Parts Catalog (ETKA).

Removing



CAUTION

Risk of accident due to the vehicle rolling away.

Before removing the parking brake motor, secure the vehicle from rolling spect to the correctness of information in this document. Copyright

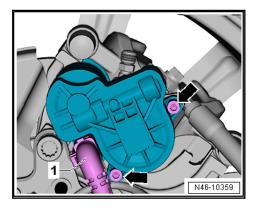
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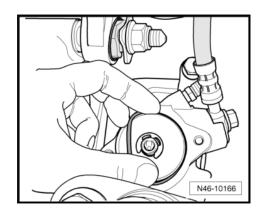
- Release the parking brake.
- Switch off the ignition.
- Disconnect the connector -1-
- Remove the bolts -arrows-.
- Remove the parking brake motor from the brake caliper, while doing so turn the parking brake motor back and forth.
- Remove the seal.

Installing

Install in reverse order of removal while noting the following:

- The ring groove for the gasket and the parking brake motor contact surface must not be damaged.
- Clean the parking brake motor ring groove and contact surface.
- Slightly apply Lithium Grease on the new seal and install.





- Push back the drive axle a little using a Torx insert E11 -item A- until the parking brake motor can be positioned correctly.
- Do not remove the gasket when assembling the parking brake motor.
- Rotate the parking brake motor until the bolt hole and threads are aligned.
- The parking brake motor must be flush with the brake caliper. Under no circumstances may it be pulled against the brake caliper with bolts.
- Tighten the bolts -arrows-.
- Connect the connector -1-.
- After installation, select the "Electromechanical Parking Brake Control Module - J540" program Refer to to 16.1. Diagrammero permitted unless authorised by AUDI AG. AUDI AG doe
 with respect to the correctness of information in this of nostic Entries", page 16.
- Continue to follow the instructions in the Vehicle Diagnostic Tester display.



CAUTION

Faulty brakes increase the risk of an accident.

Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

Refer to ⇒ "3.1 Overview - Parking Brake", page 103

3.3 Parking Brake, Manually Loosening



Note

Due to a mechanical or electrical malfunction, it may be required to mechanically release the parking brake in order to move the vehicle.

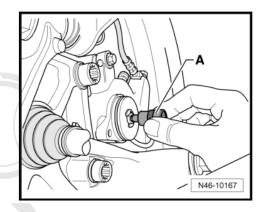
Procedure

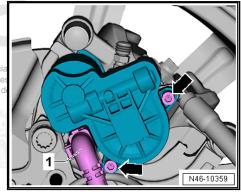


CAUTION

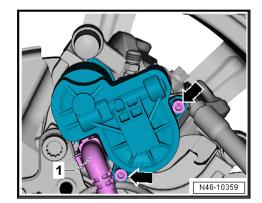
Risk of accident due to the vehicle rolling away.

- Before removing the parking brake motor, secure the vehicle from rolling.
- Remove the rear wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.





- Disconnect the connector -1-.
- Remove the bolts -arrows-.
- Remove the parking brake motor from the brake caliper, while doing so turn the parking brake motor back and forth.



Using a Torx insert E11 -item A-, turn the drive axle back until the brake is loosened.

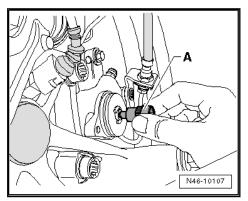


Note

Install the parking brake motor after successfully eliminating the malfunction. Refer to ⇒ "3.2 Left and Right Parking Brake Motor" V282 / V283 , Removing and Installing", page 104.

Tightening Specifications

- Refer to ⇒ "3.1 Overview Parking Brake", page 103
- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires .





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Brake Pedal 4

- ⇒ "4.1 Overview Brake Pedal", page 107
- ⇒ "4.2 Brake Pedal, Disconnecting from Brake Booster", page 111
- ⇒ "4.3 Brake Pedal, Attaching to Brake Booster", page 111
- ⇒ "4.4 Brake Pedal, Removing and Installing", page 111
- ⇒ "4.5 Mounting Bracket, Removing and Installing", page 113
- 4. A totected by co Overview priBraken Pedaloses, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability ⇒ "4." It overview "Brake Pedal", LiHD" to page 107 right by AUDI AG.
- 4.1.1 Overview - Brake Pedal, LHD

1 - Brake Pedal

- □ Refer to ⇒ "4.4 Brake Pedal, Removing and Installing", page 111
- □ Refer to ⇒ "4.2 Brake Pedal, Disconnecting from Brake Booster", page 111
- ☐ Refer to ⇒ "4.3 Brake Pedal, Attaching to Brake Booster", page <u>111</u>

2 - Bearing Shell

☐ Installed between the brake booster mount and the brake pedal

3 - Mount

□ For the brake booster ball head

4 - Bearing Bushing

- Cannot be replaced
- Note the installation position

5 - Bushing

Oval

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- ☐ For mounting pin the correct
- Replace after removing

7 - Bushing

Oval

8 - Nuts

- Self-locking
- □ Replace after removing
- □ Refer to ⇒ Fig. ""Mounting Bracket tightening specification and sequence"", page 109

9 - Bushings

□ Round

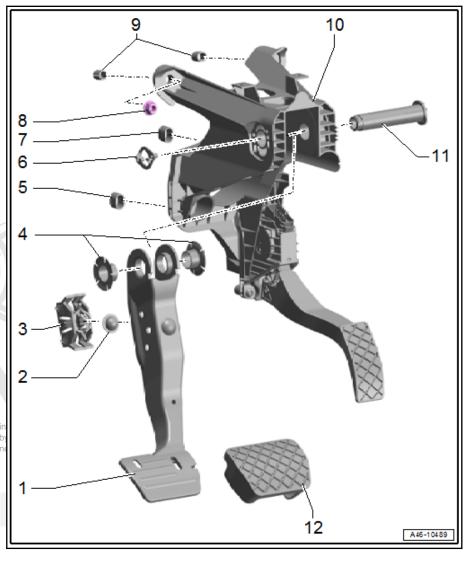
10 - Pedal Assembly/Mounting Bracket

☐ Refer to ⇒ "4.5 Mounting Bracket, Removing and Installing", page 113

11 - Mounting Pin

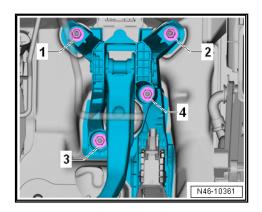
- ☐ Remove the mounting bracket to remove.
- Cannot be removed without being damaged
- Do not grease the mounting pin

12 - Pedal Rubber



Mounting Bracket - tightening specification and sequence

- Tighten the nuts to 25 Nm in the sequence -1 through 4-.



4.1.2 Overview - Brake Pedal, RHD (Not for North America Market)



Note

- ♦ Do not shorten the path for the brake pedal with additional carpets.
- ♦ Do not lubricate or grease the mounting pin. The mounting pin must remain dry.



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1 - Bolt

□ 20 Nm

2 - Mounting Bracket

Removing and Installing. Refer to ⇒
 "4.5 Mounting Bracket, Removing and Installing", page 113.

3 - Nut

□ 25 Nm

4 - Clip

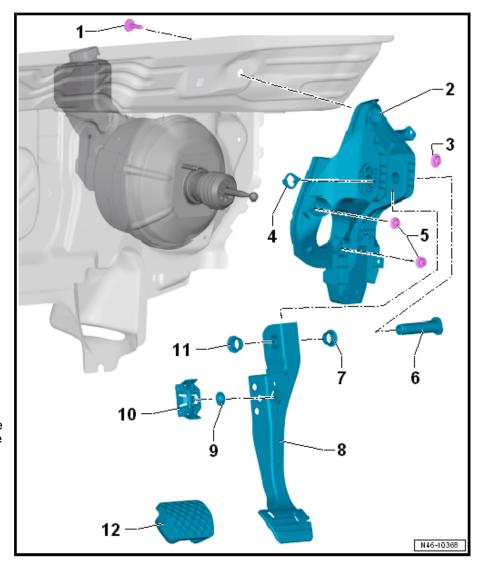
- □ Replace
- Insert in both holes on the mounting bracket

5 - Nut

- ☐ To secure the brake booster
- Quantity: 2
- □ 25 Nm

6 - Mounting Pin

- Remove the mounting bracket to remove.
- Removing: turn the mounting pin clockwise and while doing so, the tabs on the mounting pin break.
- ☐ Replace the mounting pin
- Do not lubricate or grease the mounting pin. The mounting pin must remain dry.



☐ Installing: turn the mounting pin counter-clockwise until the tabs engage audibly in the stop

7 - Bearing Bushing

□ Not replaceable; check for proper installation position

8 - Brake Pedal

- □ Brake Pedal, Removing from Brake Booster. Refer to ⇒ "4.2 Brake Pedal, Disconnecting from Brake Booster", page 111.
- □ Brake Pedal, Attaching to Brake Booster. Refer to ⇒ "4.3 Brake Pedal, Attaching to Brake Booster", page 111.
- Removing and Installing. Refer to ⇒ "4.4 Brake Pedal, Removing and Installing", page 111.

9 - Bearing Shell

10 - Mount

☐ For the brake booster push rod ball head

11 - Bearing Bushing

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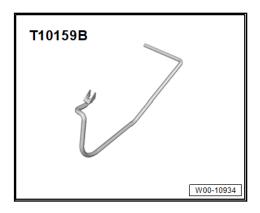
12 - Cap



4.2 Brake Pedal, Disconnecting from Brake Booster

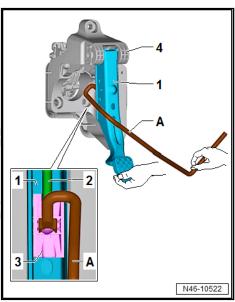
Special tools and workshop equipment required

♦ Release Tool - T10159B-



Separating

- Press and hold the brake pedal -1- in the direction of the brake booster.
- Insert the Release Tool T10159B- -item A- and pull in the direction of the driver seat. While doing so, counterhold at the brake pedal so that it does not move toward the rear. While doing so, the mount retaining tabs -3- will be pushed out of the pushrod ball head -2-.
- Pull the Release Tool T10159B- and brake pedal together toward the driver seat. As a result, the brake pedal is removed from the pushrod ball head.
- 4 Mounting Bracket



4.3 Brake Pedal, Attaching to Brake Boos-

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 Hold the pushrod ball head in front of the mount and push the brake pedal toward the brake booster -arrow- until the ball head engages audibly.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.



4.4 Brake Pedal, Removing and Installing

Special tools and workshop equipment required

♦ 14 mm Hex Socket Wrench

Removing

- Remove the mounting bracket. Refer to ⇒ "4.5 Mounting Bracket, Removing and Installing", page 113.
- Turn the mounting pin -2- clockwise using the 14 mm hex socket wrench until the arrow marking aligns with the locating tab -3- on the mounting bracket.



Note

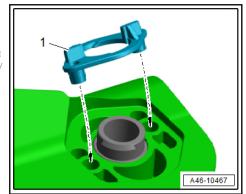
While doing so, the tabs -1- and -4- break.

- Remove the mounting pin and remove the brake pedal from the mounting bracket.
- Remove the clip.

Installing

- Do not lubricate or grease the mounting pin. The mounting pin must remain dry.
- Both bearing bushings must be located in the brake pedal bearing so that the brake pedal is securely guided into the mounting bracket.
- Insert the new clip -1- into the holes on the mounting bracket -arrows-.

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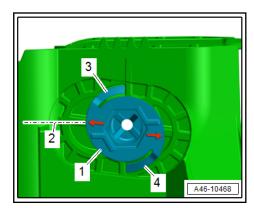
- Install the new mounting pin -1- while securing the clip from moving.
- Turn the mounting pin counter-clockwise using the 14 mm hex socket wrench until the tabs -3- and -4- engage audibly.
- The arrow marking must align with the locating tab -2- on the mounting bracket as shown.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.



4.5 Mounting Bracket, Removing and Installing

⇒ "4.5.1 Mounting Bracket, Removing and Installing, LHD Vehicle", page 113

4.5.1 Mounting Bracket, Removing and Installing, LHD Vehicle

Removing

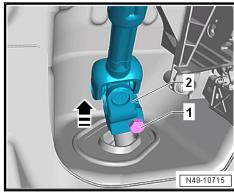
- Remove the crash bolster. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel Crossmember; Crash Bolster, Removing and Installing.
- Refer to ⇒ "4.2 Brake Pedal, Disconnecting from Brake Booster", page 111.
- Remove the nuts -arrows- and the footwell trim panel.

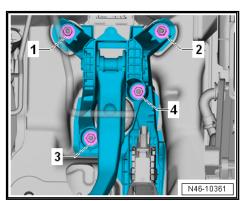


 Remove the bolts -1- and remove the steering intermediate shaft -2- from the steering gear -arrow-.



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- with respect to the correctness of information in this document. Copyright by AUDI A Remove the nuts -1 through 4- and pull the mounting bracket slightly toward the rear.





- Disconnect the connectors -2 and 3-.
- Remove the expanding rivet -1- and remove the headlamp range control module.
- Remove the mounting bracket.

Installing

Install in reverse order of removal while noting the following:

 Bring the mounting bracket with the installed brake pedal into the installation position.



Note

- Make sure that the wire for the accelerator pedal module is free and not pinched when inserting the mounting bracket.
- ♦ Make sure that the mounting bracket sits in all stud bolts.
- Refer to ⇒ "4.3 Brake Pedal, Attaching to Brake Booster" page 111.
- Install the crash bolster. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel Crossmember; Crash Bolster, Removing and Installing.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.

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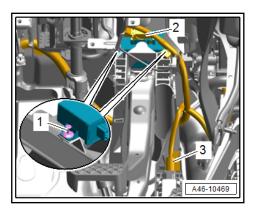
Tightening Specifications

- Refer to ⇒ Fig. ""Mounting Bracket tightening specification and sequence"", page 109
- Steering intermediate shaft. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column; Overview
 Steering Column .

4.5.2 Mounting Bracket, Removing and Installing, RHD (Not for North America Market)

Removing

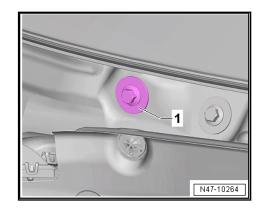
Remove the Windshield Wiper Motor - V-. Refer to ⇒ Electrical Equipment; Rep. Gr. 92; Windshield Wiper System; Windshield Wiper Motor V, Removing and Installing.

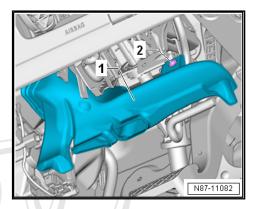


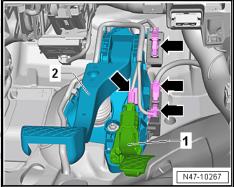
- Remove the bolt -1-.
- Remove the driver side instrument panel side cover. Refer to
 ⇒ Body Interior; Rep. Gr. 70; Instrument Panel; Instrument Panel Side Cover, Removing and Installing.
- Remove the footwell cover on the driver side. Refer to
 ⇒ Body Interior; Rep. Gr. 68; Storage Compartment/Covers.
- Remove the driver side storage compartment. Refer to
 ⇒ Body Interior; Rep. Gr. 68; Storage Compartment/Covers .
- Remove the driver side instrument panel cover. Refer to
 ⇒ Body Interior; Rep. Gr. 68; Storage Compartments and Covers; Driver Side Instrument Panel Cover, Removing and Installing.
- Remove the knee airbag. Refer to ⇒ Body Interior; Rep. Gr. 69; Knee Airbags; Overview - Knee Airbag.
- Remove the bolt -2- and remove the driver side footwell vent -1-. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; Air Routing; Overview - Air Routing and Air Distribution in Vehicle Interior.
- Remove the brake pedal crash bolster and set aside. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel Central Tube; Overview - Instrument Panel Central Tube .
- Disconnect the brake pedal from the brake booster. Refer to ⇒ "4.2 Brake Pedal, Disconnecting from Brake Booster", page 111.
- Disconnect and remove the connectors -arrow-.
- Remove the accelerator pedal module -1- from the mounting bracket -2-. Refer to ⇒ Rep. Gr. 20; Accelerator Pedal Mechanism; Accelerator Pedal Module with Accelerator Pedal Position Sensor G79/G185, Removing and Installing.

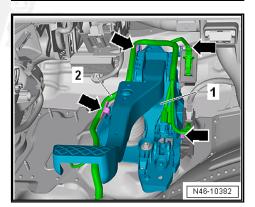
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 Unclip the wiring harness -2- from the mounting bracket -1--arrows-.

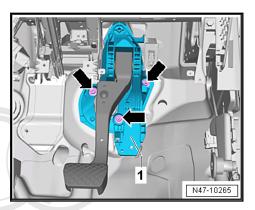








Remove the nuts -arrows- from the mounting bracket -1-.

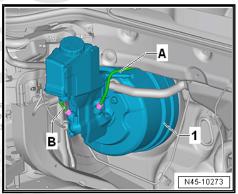


Secure the brake booster -1- from falling out.

Installing

Install in reverse order of removal while noting the following:

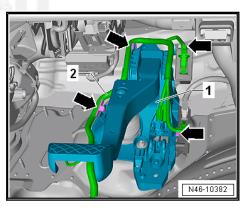
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- Route the wiring harness -2- correctly so that it is not pinched.
- Clip in the wiring harness -2- at the mounting bracket -1--arrows-.
- Connect the brake pedal to the brake booster. Refer to ⇒ 4.3 Brake Pedal, Attaching to Brake Booster", page 111.

Tightening Specifications

- Refer to ⇒ "4.1.2 Overview Brake Pedal, RHD (Not for North America Market)", page 109
- Crash Bolster. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel Central Tube; Overview - Instrument Panel Central Tube .
- Footwell Vent. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; Air Routing; Overview Passenger Compartment Air Routing and Air Distribution .
- Knee Airbag. Refer to ⇒ Body Interior; Rep. Gr. 69; Knee Airbags; Overview - Knee Airbag.
- Driver Side Covers. Refer to ⇒ Body Interior; Rep. Gr. 68; Storage Compartments/Covers; Component Location Overview - Storage Compartments/Covers .
- Windshield wiper system. Refer to ⇒ Electrical Equipment; Rep. Gr. 92; Windshield Wiper System; Overview - Windshield Wiper System.
- Plenum chamber cover. Refer to ⇒ Body Exterior; Rep. Gr. 50; Bulkhead; Overview - Plenum Chamber Cover.



47 – Hydraulic Components

1 Front Brake Caliper

- ⇒ "1.1 Overview Front Brake Caliper", page 117
- ⇒ "1.2 Brake Caliper Piston, Removing and Installing", page 118
- ⇒ "1.3 Dust Protectors and Guide Pins, Replacing", page 124
- 1.1 Overview Front Brake Caliper
- permitted unless authorised by AUDI AG, AUDI AG does not quarantee or accept any liability

 → "July 1 Doverview Front Brake Caliper Single Priston Brake",

 page 117
- ⇒ "1.1.2 Overview Front Brake Caliper, Multiple-Piston Brakes", page 117

1.1.1 Overview - Front Brake Caliper, Single-Piston Brake

1 - Brake Caliper

2 - Guide Pin

Refer to ⇒ "1.3 Dust Protectors and Guide Pins, Replacing", page 124

3 - Bearing Bushing

- For the guide pins
- □ Refer to ⇒ "1.3 Dust Protectors and Guide Pins, Replacing", page 124

4 - Seal

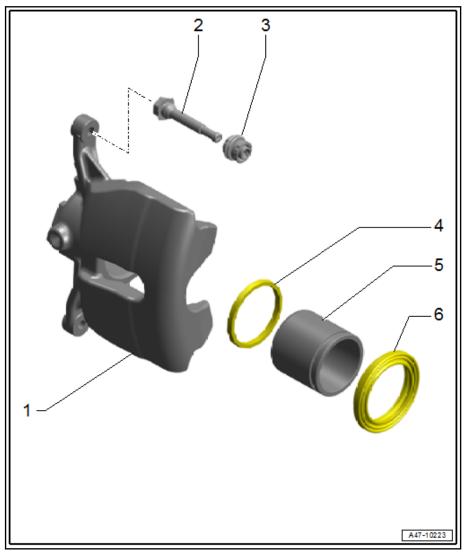
- Removing and Installing. Refer to ⇒
 "1.2 Brake Caliper Piston, Removing and Installing", page 118
- Do not damage when installing the brake caliper piston

5 - Brake Caliper Piston

□ Refer to ⇒ "1.2 Brake Caliper Piston, Removing and Installing", page 118

6 - Protective Cap

- □ Refer to ⇒ "1.2 Brake Caliper Piston, Removing and Installing", page 118
- Pull onto the brake caliper piston with the outer sealing lip
- $\hfill \Box$ Do not damage when installing the brake caliper piston



1.1.2 Overview - Front Brake Caliper, Multiple-Piston Brakes

1 - Brake Caliper

2 - Seal

□ Removing and Installing. Refer to = "1.2 Brake Caliper Piston, Removing and Installing", page 118.

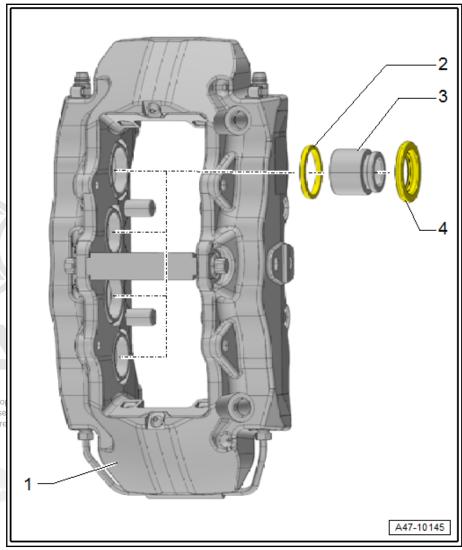
3 - Brake Caliper Piston

□ Refer to ⇒ "1.2 Brake Caliper Piston, Removing and Installing", page 118

4 - Protective Cap

- When damaged, install the complete repair kit. Refer to the ⇒ Electronic Parts Catalog (ETKA).
- □ Removing and Installing. Refer to <u>⇒</u>
 "1.2 Brake Caliper Piston, Removing and Installing", page 118

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1.2 Brake Caliper Piston, Removing and Installing

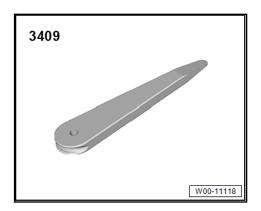
⇒ "1.2.1 Brake Caliper Piston, Removing and Installing, Single-Piston Brake", page 118

⇒ "1.2.2 Brake Caliper Piston, Removing and Installing, Multiple-Piston Brakes", page 121

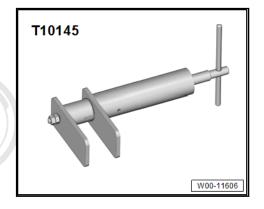
Brake Caliper Piston, Removing and 1.2.1 Installing, Single-Piston Brake

Special tools and workshop equipment required

Trim Removal Wedge - 3409-



◆ Piston Resetting Tool - T10145-



◆ Lubricating Grease . Refer to ⇒ Electronic Parts Catalog (ETKA).

Removing

- Brake caliper removed and separated from the hydraulies, in part or in whole, is not system. Refer to 3 1.4 1 Brake Caliper. Replacing Single Pyright by AUDI AG. Piston Brake", page 71.
- Tension the brake caliper in a vise with protective covers over the jaws.



Note

Make sure that the paint coat on the brake caliper is not damaged when removing the brake caliper pistons and the protective caps.

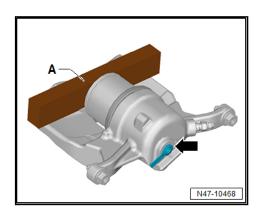
Place a wooden board -A- into the recess so the brake caliper piston is not damaged.



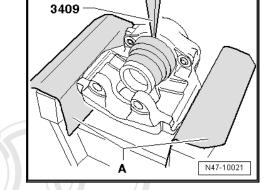
CAUTION

Leaking brake fluid increases the risk of injury. Irritation and injury to the skin and eyes are possible.

- Wear protective eyewear.
- Wear safety gloves.
- Place a cloth tightly around the compressed air gun nozzle on the brake caliper to catch any spraying brake fluid.
- Position the compressed air gun nozzle on the hole -arrowfor the brake hose and press the brake caliper piston out of the brake caliper.



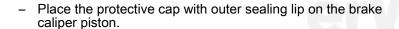
- Remove the protective cap from the brake caliper using the Trim Removal Wedge - 3409- .
- A Vise Protective Jaws

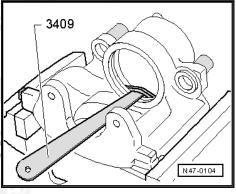


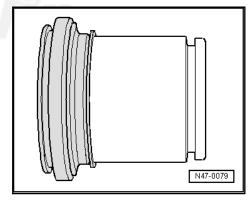
- Remove the seal using the Trim Removal Wedge 3409-.
- When removing, make sure that the cylinder surface is not damaged.

Installing

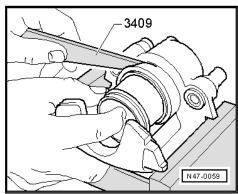
- Clean the surfaces on the brake caliper piston and gasket only with mineral spirits and then dry.
- Thinly coat the brake caliper piston and seal with Lithium Lubricating Grease G 052 150 A2-before invarialing in the private or confusion of the company o
- Insert the seal into the brake caliper."



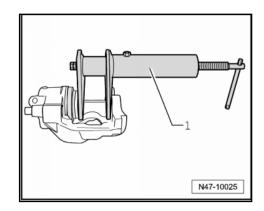




Insert the inner sealing lip in the cylinder groove using the Trim Removal Wedge - 3409- at the same time hold the piston in front of the brake caliper.



- Press the brake caliper piston with the piston resetting tool -1- in the brake calipers, at the same time to not tilt.
- Outer sealing lip of protective cap will then engage in the brake caliper piston groove.



Brake Caliper Piston, Removing and 1.2.2 Installing, Multiple-Piston Brakes

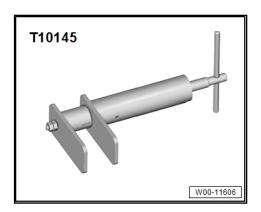
Special tools and workshop equipment required

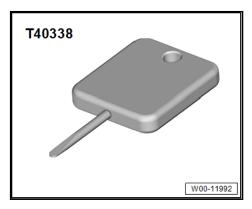
♦ Piston Resetting Tool - T10145-



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- Thrust Piece T40325-
- Lubricating Grease . Refer to ⇒ Electronic Parts Catalog (ETKA).

Removing

- Brake caliper removed and separated from the hydraulic system. Refer to ⇒ "1.4 Brake Caliper, Replacing", page 71.
- Tension the brake caliper in a vise with protective covers over the jaws.

CAUTION

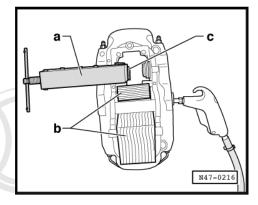
Leaking brake fluid increases the risk of injury. Irritation and injury to the skin and eyes are possible.

- Wear protective eyewear.
- Wear safety gloves.

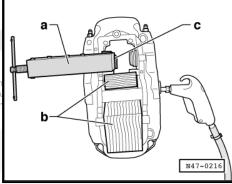


Note

- Make sure that the paint coat on the brake caliper is not damaged when removing the brake caliper pistons and the protective caps.
- Only one brake caliper piston can be pressed out at a time.
- Hold the opposite brake caliper piston firmly in the brake caliper using the Piston Resetting Tool - T10145- -item a-.
- To prevent damage to the brake caliper paint coating, place a piece of rubber or similar object between the Piston Resetting Tool - T10145- and the brake caliper.



- Block the other brake caliper pistons using wooden blocks -b-, for example. Also place a wooden board -c- in front of the Piston Resetting Tool - T10145- -a- so that the brake caliper piston does not become damaged when being pressed
- Place a cloth tightly around the compressed air gun nozzle on the brake caliper to catch any spraying brake fluid, AUDI AG. AUDI
- Position the compressed air gun nozzle on the hole for the brake hose and press the brake caliper piston out of the brake caliper.





Note

The bleed screws are closed.

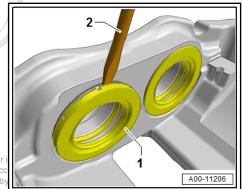
Brake System - Edition 03.2024

Carefully pry out the seal from the brake caliper with the RE-MOVAL TOOL - T40338- -2- using gentle lever movements, and do not damage the groove in the brake caliper for the protective cap while doing so.



Note

- When removing, make sure that the cylinder surface is not damaged.
- When a piston wall is damaged pthe brake caliper must be s, in part or permitted unless authorised by AUDI AG. AUDI AG does not guarantee or ac replaced. with respect to the correctness of information in this document. Copyright by



Installing



Note

- Install the entire repair kit.
- Only use mineral spirits to clean the brakes.
- When a piston wall is damaged, the brake caliper must be replaced.
- Clean the surfaces on the pistons and seal only with mineral spirits and then dry.
- Before inserting the seal, thinly coat it with Lithium Grease.
- Insert the seal into the brake caliper.
- Place the protective cap on the brake caliper piston.
- Press the protective cap into the brake piston groove.



Note

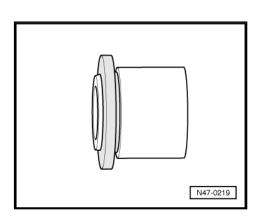
Pay attention to the correct installation position of the protective cap in the brake piston groove.

- Before inserting the piston, thinly coat it with Lithium Grease .
- Without tilting, push the brake caliper piston with inserted protective cap using constant pressure.



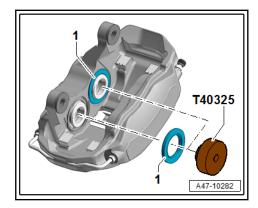
Note

Do not tilt the brake piston when inserting in the brake caliper.



Four-Piston Brake:

- Insert the Piston Resetting Tool T10145- and the Thrust Piece - T40325- in the brake caliper.
- Slowly press in the protective cap using the Piston Resetting Tool - T10145- and the Thrust Piece - T40325- for the protective cap -1-.

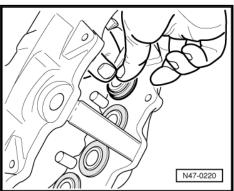


Eight-Piston Brake:

 Without tilting it, push the brake caliper pistons using constant pressure.

Continuation for all:

- The protective cap must fit tightly in the groove. If necessary, push down on it slightly with the Piston Resetting Tool -T10145-.
- The protective cap must no longer be able to be pulled out of the brake caliper by hand.
- Repeat the work procedure on the next brake caliper piston.



1.3 Dust Protectors and Guide Pins, Replacing



Note

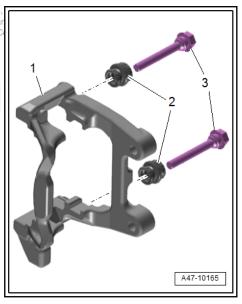
Install the repair kit if the dust protectors or guide pins are damaged.

Removing

- Remove the brake caliper. Refer to ⇒ "1.3.1 Brake Caliper Removing and Installing, Single-Piston Brake", page 64.
- Remove the dust protectors 22 from the groove on the brake roses, carrier -1-.
 with respect to the correctness of information in this document. C
- Remove the guide pins -3- from the brake carrier.
- Remove the dust protectors from the guide pins.

Installing

- Lubricate the dust protector before inserting.
- Slide the dust protector over the groove on the guide pin.
- Slide the guide pins -3- with the dust protector -2- through the brake carrier -1-.
- Press the dust protector over the groove on the brake carrier
- Install the brake caliper. Refer to ⇒ "1.3.1 Brake Caliper, Removing and Installing, Single-Piston Brake", page 64.



2 Rear Brake Caliper

- ⇒ "2.1 Overview Rear Brake Caliper", page 125
- ⇒ "2.2 Dust Cap, Removing and Installing", page 125
- ⇒ "2.3 Bearing Bushing and Guide Pin, Replacing", page 127

2.1 Overview - Rear Brake Caliper

1 - Brake Caliper

☐ The brake caliper piston cannot be removed

2 - Guide Pin

Refer to ⇒ "2.3 Bearing Bushing and Guide Pin, Replacing", page 127

3 - Bearing Bushing

Refer to ⇒ "2.3 Bearing Bushing and Guide Pin, Replacing", page 127

4 - Caps

5 - Bearing Bushing

Refer to ⇒ "2.3 Bearing Bushing and Guide Pin, Replacing", page 127

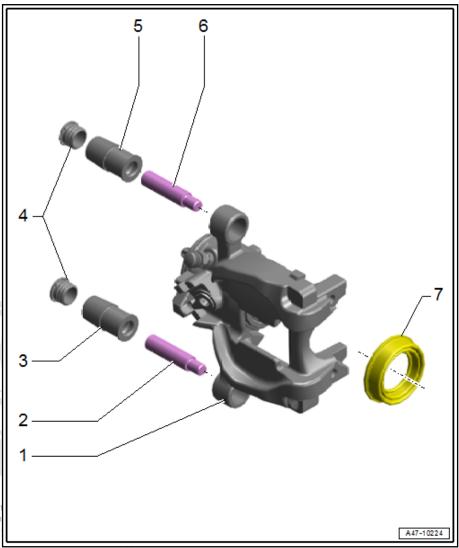
6 - Guide Pin

Refer to ⇒ "2.3 Bearing Bushing and Guide Pin, Replacing", page 127

7 - Protective Cap

□ Refer to ⇒ "2.2 Dust Cap, Removing and Installing", page 125

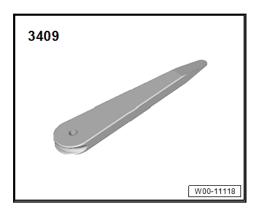
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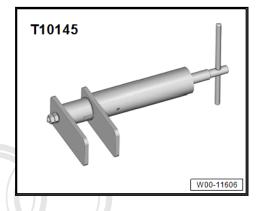
2.2 Dust Cap, Removing and Installing

Special tools and workshop equipment required

Trim Removal Wedge - 3409-



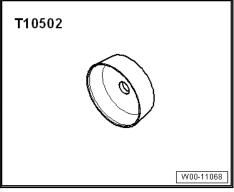
Piston Resetting Tool - T10145-



Press Piece - T10502-



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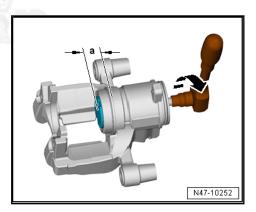
Removing

- Piston is driven back.
- The parking brake motor is removed.



There is a risk of destroying the ball thread by removing from the brake caliper piston and thrust nut.

- Never completely remove the brake caliper piston and thrust nut.
- Remove the piston a maximum of 20 mm -dimension acounter-clockwise using a Torx insert -arrow-.



 Remove the protective cap from the brake caliper using the Trim Removal Wedge - 3409- .

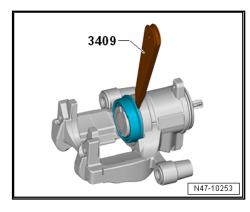
Installing

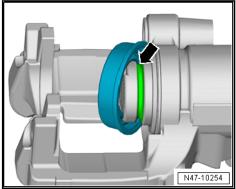


Note

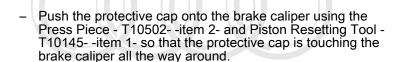
To clean only use mineral spirits.

- Clean the surfaces on the pistons and brake caliper using mineral spirits and then dry.
- Place the protective cap in the groove -arrow- on the piston.



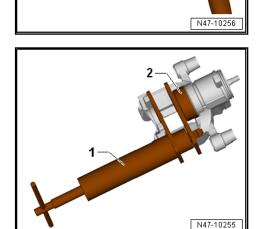


- Install the piston clockwise -arrow-.





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2.3 Bearing Bushing and Guide Pin, Replacing

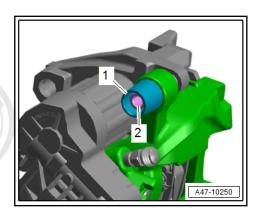
Removing

Remove the brake pads. Refer to ⇒ "2.2 Brake Pads, Removing and Installing", page 89.

- Pull the guide pin -2- outward from the bearing bushing.
- Pull the bearing bushing -1- out of the brake caliper.

Installing

- Insert the new bearing bushing into the brake caliper.
- The bearing bushing must be seated in the center of the brake caliper.
- Slightly coat the guide pin with grease.
- Push the guide pin into the bearing bushing.
- Check both guide pins for ease of movement.
- Both guide pins must be able to slide.
- Install the brake pads. Refer to ⇒ "2.2 Brake Pads, Removing and Installing", page 89



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3 Brake Booster/Brake Master Cylinder

- ⇒ "3.1 Overview Brake Booster/Brake Master Cylinder", page 129
- ⇒ "3.2 Brake Lamp Switch, Removing and Installing", page 134
- ⇒ "3.3 Brake Booster, Removing and Installing", page 137
- ⇒ "3.4 Brake Master Cylinder, Removing and Installing", page 153
- ⇒ "3.5 Brake Fluid Reservoir, Removing and Installing", page 161
- \Rightarrow "3.6 Brake Fluid Level Warning Switch F34 , Removing and Installing", page 164
- 3.1 Overview Brake Booster/Brake Master Cylinder
- ⇒ "3.1.1 Overview Brake Booster/Brake Master Cylinder, LHD", page 129
- 3.1.1 Overview Brake Booster/Brake Master Cylinder, LHD



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1 - Nut

- Replace after removing
- □ 23 Nm

2 - Heat Shield

Equipped on some models

3 - Brake Master Cylinder

- ☐ Cannot be serviced. If malfunctioning, replace as complete unit.
- □ Refer to ⇒ "3.4 Brake Master Cylinder, Removing and Installing", page 153

4 - Brake Line

- □ Brake master cylinder/primary piston circuit to hydraulic unit
- □ 14 Nm

5 - Brake Line

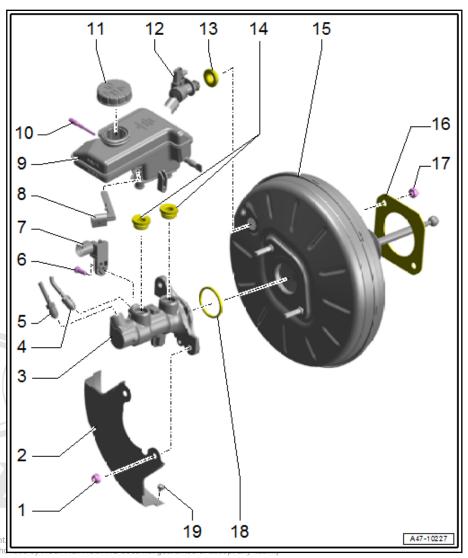
- ☐ Brake master cylinder/secondary piston circuit to hydraulic unit
- ☐ 14 Nm

6 - Bolt

□ 8 Nm

7 - Brake Lamp Switch - F- / Brake Pedal Switch - F63-

□ Refer to ⇒ "3.2 Brake Lamp Switch, Removing and Installing", page 134 Protected by copyring page 134 Protected by copyring page 134



8 - Brake Fluid Level Warning Switch - F34-mation in this document. Copyright by AUDI AG.

□ Refer to ⇒ "3.6 Brake Fluid Level Warning Switch F34, Removing and Installing", page 164

9 - Brake Fluid Reservoir

☐ Refer to ⇒ "3.5 Brake Fluid Reservoir, Removing and Installing", page 161

10 - Locating Pin or Stud Bolt

- ☐ Slide through the brake fluid reservoir and the master brake cylinder
- ☐ The locking pin must be pushed into the brake fluid reservoir tab.
- ☐ Tighten the stud bolt to 5 Nm

11 - Cap

12 - Vacuum Hose

■ With check valve

13 - Seal

□ Replace after removing

14 - Plugs

☐ To install, coat with brake fluid

15 - Brake Booster

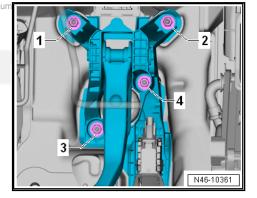
☐ Function Test:

- With the engine switched off, press the brake pedal firmly several times (to reduce the vacuum in the device).
- □ Refer to ⇒ "3.3 Brake Booster, Removing and Installing", page 137
- 16 Seal
 - □ Replace after removing
- 17 Nut
 - □ Replace after removing
 - □ Refer to ⇒ Fig. ""Brake booster tightening specification and sequence"", page 131
- 18 Seal
 - □ Replace after removing
- 19 Rubber Buffer

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Brake booster - tightening specification and sequence formation in this docu

- Tighten the nuts to 25 Nm in the sequence -3 and 4-



3.1.2 Overview - Brake Booster/Brake Master Cylinder, RHD (Not for North America Market)

1 - Cap

2 - Brake Fluid Reservoir

☐ With Brake Fluid Level Warning Switch - F34-

3 - Brake Booster

- Removing and Installing. Refer to ⇒
 "3.3 Brake Booster, Removing and Installing",
 page 137 .
- ☐ Function Test:
- With the engine switched off, press the brake pedal firmly several times (to reduce the vacuum in the device).
- Hold the brake pedal with average foot pressure and start the engine. If the brake booster is working properly, the brake pedal will be felt to give noticeably under foot (booster becomes effective).
- □ Replace completely if there are malfunctions (check the brake booster vacuum system first; refer to ⇒ "4.5 Vacuum System, Checking", page 170 .)

4 - Seal

- Vacuum hose/brake booster
- □ Replace if damaged
- ☐ Make sure the seal is seated correctly.

5 - Vacuum Line

6 - Seal

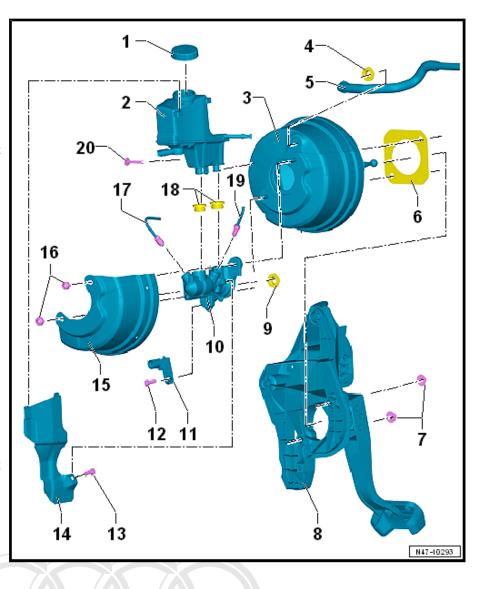
- Replace after removing
- Bonded, only at the factory
- ☐ Removing the adhesive residue
- ☐ The bonding on the brake booster and bulkhead must not be replaced

7 - Nut

- □ Quantity: 2 Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability
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 8 Bracket with Brake Pedal
 - □ Remove the mounting bracket. Refer to <u>⇒ "4.5 Mounting Bracket, Removing and Installing", page 113</u>.
 - □ Remove the brake pedal. Refer to ⇒ "4.4 Brake Pedal, Removing and Installing", page 111.
 - ☐ Brake Pedal, Removing from Brake Booster. Refer to ⇒ "4.2 Brake Pedal, Disconnecting from Brake Booster", page 111
 - □ Brake Pedal, Attaching to Brake Booster. Refer to ⇒ "4.3 Brake Pedal, Attaching to Brake Booster", page 111.

9 - Seal



□ Replace if damaged□ Make sure the seal is seated correctly.
☐ Brake master cylinder/brake booster
10 - Brake Master Cylinder
☐ Cannot be serviced. If malfunctioning, replace as complete unit.
□ Refer to ⇒ "3.4 Brake Master Cylinder, Removing and Installing", page 153
11 - Brake Lamp Switch - F- / Brake Pedal Switch - F63-
□ Refer to ⇒ "3.2 Brake Lamp Switch, Removing and Installing", page 134
12 - Bolt
□ 8 Nm
13 - Bolt
□ 8 Nm
14 - Heat Shield
☐ On the brake fluid reservoir
15 - Heat Shield For the brake booster Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not part or the brake booster parallel by AUDIAG AUDIAG AUDIAG does not guarantee or constraint links in the parallel by AUDIAG does not guarantee or constraint links in the parallel by AUDIAG does not guarantee or constraint.
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□ Replace after removing
Quantity: 2
□ Self-locking
□ 23 Nm
17 - Brake Line
☐ Brake master cylinder/secondary piston circuit to hydraulic unit
□ 14 Nm
With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench - Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert - AF 11mm): 12 Nm
18 - Plugs
□ Replace if damaged
☐ Make sure the plugs are seated correctly.
 Coat the plugs with brake fluid before pushing the brake fluid reservoir into the master brake cylinder. Brake Master Cylinder/Brake Fluid Reservoir
19 - Brake Line ☐ Brake master cylinder/primary piston circuit to hydraulic unit
☐ 14 Nm
 With special tools V.A.S 6854 (Mini Torque Wrench), V.A.G 1410/7 (Torque Wrench - Universal Joint) and V.A.G 1410/6 (Open Ring Spanner Insert - AF 11mm): 12 Nm
20 - Expanding Rivet
☐ To secure the brake fluid reservoir

3.2 Brake Lamp Switch, Removing and Installing

⇒ "3.2.1 Brake Lamp Switch, Removing and Installing, LHD Vehicle", page 134

3.2.1 Brake Lamp Switch, Removing and Installing, LHD Vehicle



Note

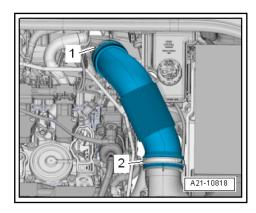
Component location. Refer to ⇒ "2.1 Component Location Overview - ABS/ESP", page 18 .

Removing

 Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .

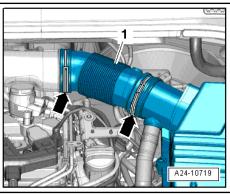
Vehicles with 1.8L/2.0L TFSI engine

 Loosen the hose clamps -1 and 2- and remove the air duct pipe.



Vehicles with 2.5L TFSI engine

 Loosen the hose clamps -arrows- and remove the air duct pipe.

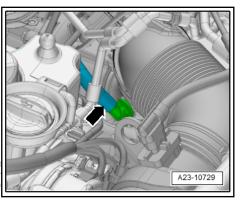


Vehicles with TDI Engine:

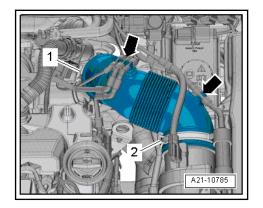
Disconnect the vacuum hose -arrow- and free it up.



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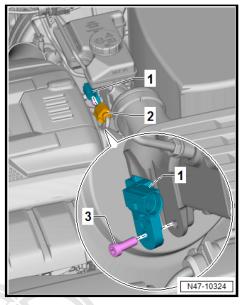


- Free up the vacuum hoses -arrows-.
- Loosen the hose clamps -1 and 2- and remove the air duct pipe.



Continuation for All Vehicles:

- Disconnect the connector -2-.
- Remove the bolt -3-.
- Remove the Brake Lamp Switch F- -item 1- from the brake master cylinder.



Installing

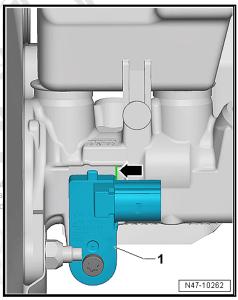
Install in reverse order of removal while noting the following:

 The brake lamp switch -1- must touch the edge -arrow- of the brake master cylinder.

Tightening Specifications

- ♦ jtem 6 (page 130)
- ♦ Refer to ⇒ Rep. Gr. 21; Charge Air System; Overview -Charge Air Hose Connections.

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3.2.2 Brake Lamp Switch, Removing and Installing, RHD Vehicle (Not for North America Market)

Removing

If equipped, remove the engine cover. Refer to \Rightarrow Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Instal-

Diesel vehicles:



CAUTION

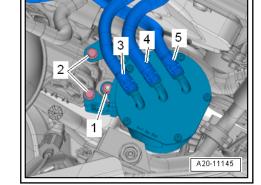
The fuel system is under pressure.

Risk of injury from fuel spraying out.

- Wear protective eyewear.
- Wear safety gloves.
- Reduce the pressure: place clean cloths around the connection point and carefully open the connection point.
- Release and disconnect the fuel supply lines -1- and -2-.
- Disconnect the couplings. Refer to ⇒ Rep. Gr. 20; Couplings; Couplings, Disconnecting.
- Unclip the fuel lines -1- and -2- from the bracket -arrow-on the coolant expansion tank -3-.

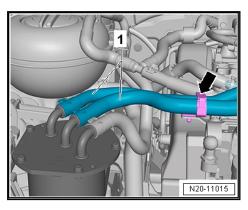
 Unclip the fuel lines -1- and -2- from the bracket -arrow-on the coolant expansion tank -3-.

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- Remove the bolts -2-.
- Remove the nut -1-.



N20-11001

- Open the bracket -arrow- and unclip the fuel lines -1-.
- Then move the fuel filter to the side.





- Release and disconnect the connector -1-.
- Release the catches with a screwdriver -arrow-.
- Lay the coolant reservoir on the engine.
- Remove the upper toothed belt guard. Refer to ⇒ Rep. Gr. 15; Toothed Belt Drive; Toothed Belt Guard, Removing and Installing.



- Release and disconnect the connector -2- from the Brake Lamp Switch - F- -1-.
- Remove the bolt -arrow-.
- Remove the Brake Light Switch F- from brake master cylinder.

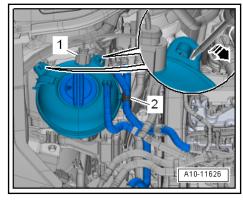
Installing

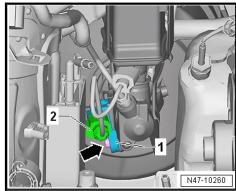
Install in reverse order of removal while noting the following:

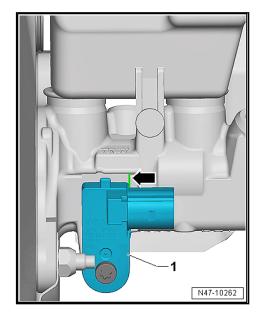
Make sure that the Brake Lamp Switch - F- -1- is positioned correctly on the edge -arrow- of the brake master cylinder.

Tightening Specifications

- Refer to ⇒ "3.1.2 Overview Brake Booster/Brake Master Cylinder, RHD (Not for North America Market)", page 131
- Refer to ⇒ Rep. Gr. 15; Toothed Belt Drive; Overview -Toothed Belt Guard .
- ◆ Refer to ⇒ Rep. Gr. 20; Fuel Filter; Overview Fuel Filter.







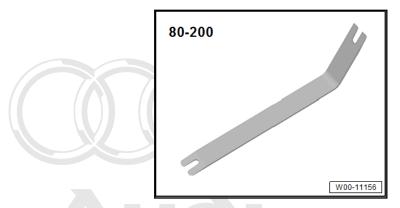
3.3 Brake Booster, Removing and Installing

⇒ "3.3.1 Brake Booster, Removing and Installing, LHD Vehi-

3.3.1 Brake Booster, Removing and Installing, LHD Vehicles

Special tools and workshop equipment required

Pry Lever - 80-200-

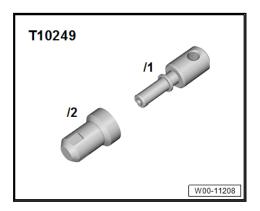


Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit - VAS 5234-

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♦ Sealing Tool - T10249-

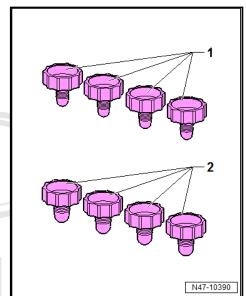


Hot air gun, for example, Wiring Harness Repair Set - Hot Air Blower - VAS 1978/14A-



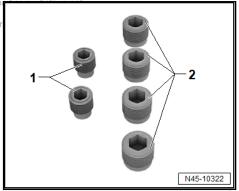
 Plugs from the Repair Kit - 1H0 698 311 A-: M10 -item 1and M12 -item 2-





M10 plug -item 1- or M12 item in from the Assembly Paliturposes, in p Set - 5Q0 698 311- with respect to the correctness of information in this document. Copy

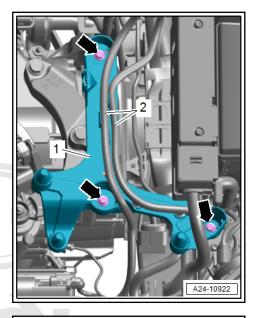




Removing

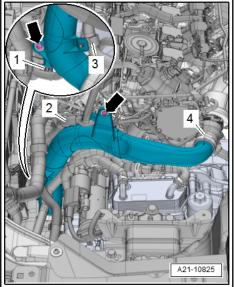
- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 23; Air Filter; Air Filter Housing, Removing and Installing or ⇒ Rep. Gr. 24; Air Filter; Air Filter Housing, Removing and Installing.

- Free up the wires -2- on the air filter housing bracket -1-using the Pry Lever 80-200- .
- Remove the bolts -arrows- and the bracket.



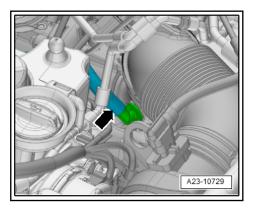
Vehicles with 2.0L TFSI engine:

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66; Noise Insulation; Noise Insulation, Removing and Protected by copyright. Copying for private or commer permitted unless authorised by AUDI AG. AUDI AG do Installing.
- Free up the wiring harness -1 and 2-from the air duct pipe tion in this
- Loosen the screw-type clamp -4-.
- Remove the bolts -arrows- and press the air duct pipe for-

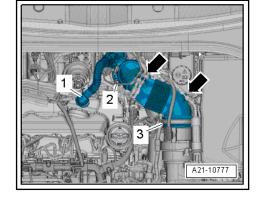


Vehicles with TDI Engine:

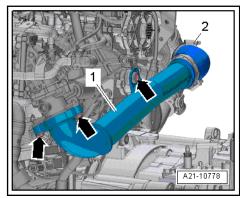
Disconnect the vacuum hose -arrow- and free it up.



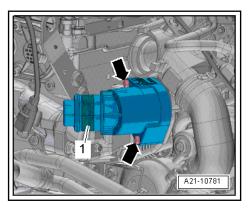
- Press the release buttons on the crankcase ventilation hose -1- and remove the hose from the cylinder head cover.
- Free up the vacuum hose on the air duct pipe -arrows-.
- Remove the bolt -2- and pivot the air duct pipe with the intake tube toward the rear and remove it from the turbocharger.



- Remove the bolts -arrows-.
- Loosen the clamp -2- and remove the air duct pipe -1-.



Remove the bolts -arrows- and remove the resonator -1-.



Continuation for All Vehicles:

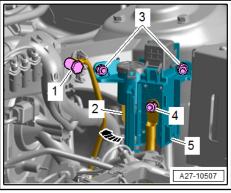
- Remove the ground pin -1-.
- Disconnecto, the connector to 2 invate or commercial purposes, in part or in whole, is not
- open the Epbox rarrown, temove the Bris wire A- and remove AG. the nuts -3-.
- Remove the E-box -5- upward.





There is a risk of contamination and paint damage from leaking brake fluid.

- Rinse off any leaking brake fluid immediately using plenty of water.
- Place sufficient lint-free cloths in the area of the engine and transmission.



Open the brake fluid reservoir.

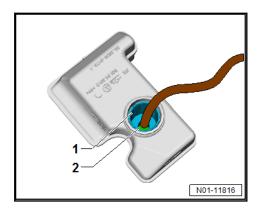
CAUTION

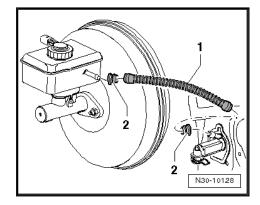
Risk of accident due to the brakes malfunctioning.

- Brake fluid must never come into contact with fluids containing mineral oils (oil, gasoline, cleaning solutions).
- Wear safety gloves that are free of oil and grease.
- Extract as much brake fluid from the brake fluid reservoir as possible using the Brake Filling and Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit - VAS 5234- with a suction hose.



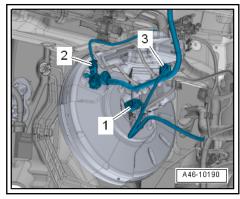
Remover the return hose into the clutch master cylinder, AG. seal it with the Sealing Tool - T10249/1- and tie it up.

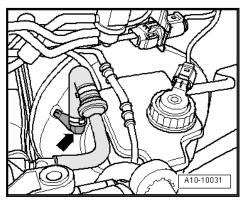




Continuation for All Vehicles:

- Disconnect the connectors:
- From the Brake Lamp Switch F-
- From the Vacuum Sensor G608-, if equipped
- From the Brake Fluid Level Warning Switch F34-
- Reduce the vacuum in the brake booster by pressing the brake pedal repeatedly.
- Carefully pull the vacuum hose -arrow- out of the brake booster and at the same time do not damage it.





- Brake System Edition 03.2024
- Place enough lint-free cloths in the area of the brake master cylinder.
- Remove the brake lines -1- on brake master cylinder.
- Immediately close open connection points with a clean plug.
- Remove the nuts -2- for the brake master cylinder.
- Remove the heat shield if present.
- Carefully remove the brake master cylinder from the brake booster.



Note

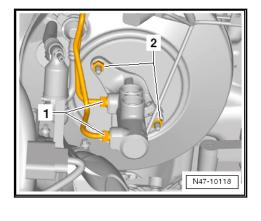
For better clarity, the brake master cylinder is shown without the brake fluid reservoir.

Vehicles with Dual-Clutch Transmission:

Remove the selector lever cable and cable bracket from the transmission. Refer to ⇒ Rep. Gr. 34 ; Selector Mechanism; Overview - Selector Mechanism .

Continuation for All Vehicles:

- Refer to ⇒ "4.2 Brake Pedal, Disconnecting from Brake Booster", page 111
- Remove the nuts -arrows- and move the footwell trim panel to the side.







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- Remove the nuts -3 and 4- for the brake booster.
- Pull the brake booster off the bonding on the bulkhead and remove it.

Installing

Install in reverse order of removal while noting the following:

- Remove any bonded joint residue from the brake booster and the bulkhead.
- Using a hot air gun, warm the adhesive residue at a low setting and remove it.
- Clean the surfaces thoroughly.
- Refer to ⇒ "4.3 Brake Pedal, Attaching to Brake Booster", page 111.
- Follow the steps for connecting the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Install the selector lever cable and the cable bracket. Refer to ⇒ Rep. Gr. 34; Selector Mechanism; Overview - Selector Mechanism.
- Install the engine cover. Refer to ⇒ Rep. Gr. 10; Engine
 Cover; Engine Cover, Removing and Installing of Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability
- Refer to ⇒ "6.2 Hydraulic System, Bleeding"; page-dir/8 of information in this document. Copyright by AUDI AG.



 Bleed the clutch hydraulic. Refer to ⇒ Rep. Gr. 30; Clutch Mechanism; Clutch Mechanism, Bleeding.

Continuation for All Vehicles:



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

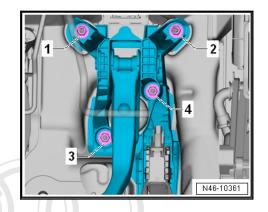
- Refer to ⇒ "3.1 Overview Brake Booster/Brake Master Cylinder", page 129
- Refer to ⇒ Rep. Gr. 21; Charge Air System; Overview -Charge Air Hose Connections.
- ◆ Refer to ⇒ Rep. Gr. 23; Air Filter; Overview Air Filter Housing or ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing.
- Refer to ⇒ Body Exterior; Rep. Gr. 66; Noise Insulation; Overview - Noise Insulation.

3.3.2 Brake Booster, Removing and Installing, RHD Vehicle with TFSI Engine (Not for North America Market)



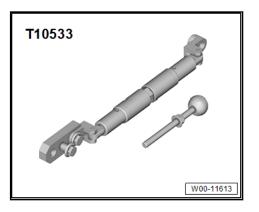
Note

First check the brake booster vacuum system in case of complaints regarding the brake booster. Refer to ⇒ "4.5 Vacuum System, Checking", page 170.



Special tools and workshop equipment required

♦ Engine Support - T10533-



 Hot air gun, for example Wiring Harness Repair Set - Hot Air Blower - VAS 1978/14A- .

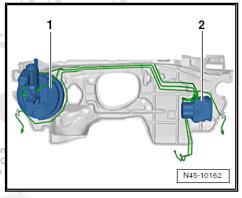


Brake booster component location in RHD vehicles:

- 1 Brake Booster with Master Brake Cylinder
- 2 ABS Hydraulic Unit N55- and ABS Control Module J104-

Removing

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep.
 Gr. 66; Noise Insulation; Overview Noise Insulation.
- If equipped, remove the engine cover. Refer to ⇒ Rep.
 Gr. 10; Engine Cover; Engine Cover; Removing and Instal or compermitted unless authorised by AUDI AG. AUDI A with respect to the correctness of information in



- Release and disconnect the connector -1- from the Oil Level Thermal Sensor - G266- .
- Remove the right drive axle heat shield. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40; Drive Axle; Drive Axle Heat Shield, Removing and Installing.
- Remove the right drive axle. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40; Drive Axle; Drive Axle, Removing and Installing.
- Remove the pendulum support. Refer to ⇒ Rep. Gr. 10; Assembly Mounts; Pendulum Support, Removing and Instal-
- Remove the catalytic converter. Refer to ⇒ Rep. Gr. 26; Emissions Control System; Catalytic Converter, Removing and Installing.
- Remove the bracket for the exhaust system from the engine. Refer to ⇒ Rep. Gr. 26; Emissions Control System; Overview - Emissions Control System .



Remove the coolant pipes from the bulkhead. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 82; Coolant Circuit with Parking/Auxiliary Heater .

Vehicles with Dual-Clutch Transmission:

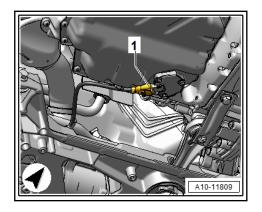
- Remove the selector lever cable from the transmission. Refer to ⇒ Rep. Gr. 34; Selector Mechanism; Selector Lever Cable, Removing and Installing.
- Unlock and remove the connector for the DSG Transmission Mechatronic - J743- . Refer to ⇒ Rep. Gr. 34 ; Mechatron-Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not
- Free up the wiring harmitted unless pull gised by AUDI AC AUDI AC does not guarantee or accept any liability harms and the confirmation in this document. Copyright by AUDI AG. push upward.

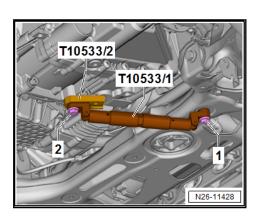
Vehicles with Manual Transmission:

Remove the shift and selector cable from the transmission, remove the cable bracket and move it to the side with the cables. Refer to ⇒ Rep. Gr. 34; Selector Mechanism.

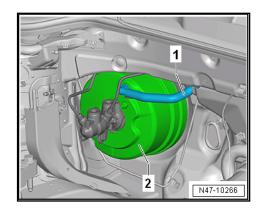
Continuation for All Vehicles:

- Position the Engine Support T10533- as shown.
- Position the Engine Support T10533/2- on the flat connection point of the Engine Support - T10533/1-.
- Install the original bolt of the pendulum support -2- in the front threaded hole of the pendulum support.
- Install a M 8 x 40 mm bolt -1- with a washer in the left threaded hole of the noise insulation.
- Tighten the bolts hand-tight.
- Push the engine and transmission with the Engine Support -T10533- as far forward as possible.
- Pay attention that the connection from the starter does not touch the battery tray.
- Remove the main brake cylinder. Refer to ⇒ "3.4 Brake Master Cylinder, Removing and Installing", page 153.





- Reduce the vacuum in the brake booster by pressing the brake pedal repeatedly.
- Pull the vacuum line -1- out of the brake booster -2-.
- Remove the driver side instrument panel side cover. Refer to
 ⇒ Body Interior; Rep. Gr. 70; Instrument Panel; Instrument Panel Side Cover, Removing and Installing.
- Remove the footwell cover on the driver side. Refer to
 ⇒ Body Interior; Rep. Gr. 68; Storage Compartment/Covers
- Remove the driver side storage compartment. Refer to
 ⇒ Body Interior; Rep. Gr. 68; Storage Compartment/Covers .
- Remove the driver side instrument panel cover. Refer to
 ⇒ Body Interior; Rep. Gr. 68; Storage Compartments and Covers; Driver Side Instrument Panel Cover, Removing and Installing.
- Remove the knee airbag. Refer to ⇒ Body Interior; Rep. Gr. 69; Knee Airbags; Overview - Knee Airbag.
- Remove the footwell vent on the driver side. Refer to
 ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87;
 Air Routing; Overview Passenger Compartment Air Routing and Air Distribution .
- Remove the brake pedal crash bolster and set aside. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel Central Tube; Overview - Instrument Panel Central Tube.
- Disconnect the brake pedal from the brake booster. Refer to ⇒ "4.2 Brake Pedal, Disconnecting from Brake Booster", page 111.





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Remove the nuts -arrows- from the mounting bracket.

Installing

Install in reverse order of removal while noting the following:

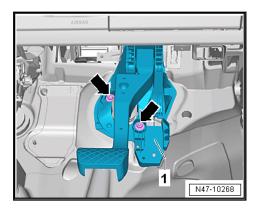


Note

- The brake booster is also bonded with the seal at the factory only.
- The bonding on the brake booster and bulkhead must not be replaced, but replace the seal.
- Remove any bonded joint residue from the brake booster and the bulkhead.
- Using a hot air gun, warm the adhesive residue at a low setting and remove it.
- Clean the surfaces thoroughly.
- Replace the seal on the brake booster.
- Carefully insert the brake booster and tighten the nuts.
- Attach the brake pedal to the brake booster. Refer to ⇒
 "4.3 Brake Pedal, Attaching to Brake Booster", page 111
- Install the brake master cylinder. Refer to <u>⇒</u> "3.4 Brake Master Cylinder, Removing and Installing", page 153.

Tightening Specifications

- Refer to ⇒ "3.1.2 Overview Brake Booster/Brake Master Cylinder, RHD (Not for North America Market)", page 131
- Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel Central Tube; Overview - Instrument Panel Central Tube .
- Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; Air Routing; Overview - Passenger Compartment Air Routing and Air Distribution.
- Refer to ⇒ Body Interior; Rep. Gr. 69; Knee Airbags; Overview Knee Airbag
- ◆ Refer to ⇒ Body Interior; Rep. Gr. 68; Storage Compartments/Covers; Component Location Overview Storage Compartments/Covers.
- Refer to ⇒ Rep. Gr. 26; Emissions Control System; Overview Emissions Control System.
- Refer to ⇒ Rep. Gr. 21 ; Turbocharger; Overview Turbocharger .
- Refer to ⇒ Rep. Gr. 15; Toothed Belt Drive; Overview -Toothed Belt Guard .
- ♠ Refer to ⇒ Heating, Ventilation and Air Conditioning; Report of the Oxios Refrigerant Circuit; System Overview of Refrigerant, Circuit of the correctness of information in this document. Copyright by AUDI AG.
- Refer to ⇒ Rep. Gr. 26; Exhaust Pipes/Mufflers; Overview
 Mufflers.
- Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 82; Coolant Circuit with Parking/Auxiliary Heater.
- ◆ Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Overview - Battery.



- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66; Noise Insulation; Overview - Noise Insulation.
- ◆ Front breather valve. Refer to ⇒ "1.1 Overview Front Brakes", page 46.
- ◆ Rear breather valves. Refer to ⇒ "2.1 Overview Rear Brakes", page 87.
- 3.3.3 Brake Booster, Removing and Installing, RHD Vehicle with TDI Engine (Not for North America Market)



Note

First check the brake booster vacuum system in case of complaints regarding the brake booster. Refer to ⇒ "4.5 Vacuum System, Checking", page 170.

Special tools and workshop equipment required

♦ Hot air gun, for example Wiring Harness Repair Set - Hot Air Blower - VAS 1978/14A- .

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Brake booster component location in RHD vehicles:

- 1 Brake Booster with Master Brake Cylinder
- 2 ABS Hydraulic Unit N55- and ABS Control Module J104-

Removing

Vehicles with emissions control module:

Remove the emissions control module. Refer to ⇒ Rep. Gr. 26; Emissions Control System; Emissions Control Module, Removing and Installing.

Vehicles with Particulate Filter or Catalytic Converter:

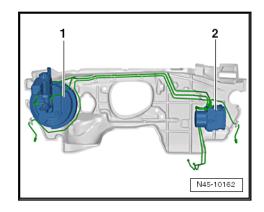
Remove the particulate filter. Refer to ⇒ Rep. Gr. 26; Emissions Control; Particulate Filter, Removing and Instal-

Vehicles with Parking Heater:

Remove the coolant pipes from the bulkhead. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 82; Coolant Circuit with Parking/Auxiliary Heater.

Vehicles with A/C System:

- Discharge the refrigerant circuit. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 00; Working with the A/C Service Station; Discharging the Refrigerant Circuit with the A/C Service Station .
- Remove the refrigerant lines with the inner heat exchanger. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; Refrigerant Circuit; Refrigerant Lines with Inner Heat Exchanger, Removing and Installing.



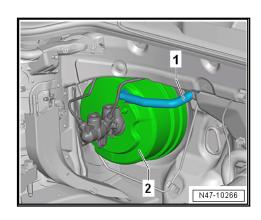


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Continuation for All Vehicles:

- Reduce the vacuum in the brake booster by pressing the brake pedal repeatedly.
- Pull the vacuum line -1- out of the brake booster -2-.
- Remove the main brake cylinder. Refer to ⇒ "3.4 Brake Master Cylinder, Removing and Installing", page 153.
- Remove the driver side instrument panel side cover. Refer to
 ⇒ Body Interior; Rep. Gr. 70; Instrument Panel; Instrument Panel Side Cover, Removing and Installing.
- Remove the footwell cover on the driver side. Refer to
 ⇒ Body Interior; Rep. Gr. 68; Storage Compartment/Covers.
- Remove the driver side storage compartment. Refer to
 ⇒ Body Interior; Rep. Gr. 68; Storage Compartment/Covers
- Remove the driver side instrument panel cover. Refer to
 ⇒ Body Interior; Rep. Gr. 68; Storage Compartments and Covers; Driver Side Instrument Panel Cover, Removing and Installing.
- Remove the knee airbag. Refer to ⇒ Body Interior; Rep. Gr. 69; Knee Airbags; Overview - Knee Airbag.
- Remove the footwell vent on the driver side. Refer to
 ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87;
 Air Routing; Overview Passenger Compartment Air Routing and Air Distribution .
- Remove the brake pedal crash bolster and set aside. Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel Central Tube; Overview - Instrument Panel Central Tube.
- Disconnect the brake pedal from the brake booster. Refer to ⇒ "4.2 Brake Pedal, Disconnecting from Brake Booster", page 111.





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- Remove the nuts -arrows- from the mounting bracket.
- Remove the brake booster downward.

Installing

Install in reverse order of removal while noting the following:



Note

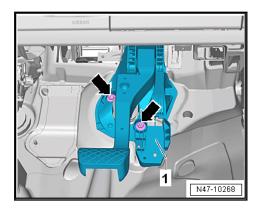
- The brake booster is also bonded with the seal at the factory only.
- The bonding on the brake booster and bulkhead must not be replaced, but replace the seal.
- Remove any bonded joint residue from the brake booster and the bulkhead.
- Using a hot air gun, warm the adhesive residue at a low setting and remove it.
- Clean the surfaces thoroughly.
- Replace the seal on the brake booster.
- Carefully insert the brake booster and tighten the nuts.
- Attach the brake pedal to the brake booster. Refer to ⇒
 "4.3 Brake Pedal, Attaching to Brake Booster", page 111 .
- Fill the coolant. Refer to ⇒ Rep. Gr. 19; Cooling System/Coolant; Coolant, Draining and Filling.
- Install the brake master cylinder. Refer to ⇒ "3.4 Brake Master Cylinder, Removing and Installing", page 153

Vehicles with A/C System:

 Fill the refrigerant circuit. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 00; Working with the A/C Service Station; Filling the Refrigerant Circuit with the A/C Service Station.

Tightening Specifications

- Refer to ⇒ "3.1.2 Overview Brake Booster/Brake Master Cylinder, RHD (Not for North America Market)", page 131
- Refer to ⇒ Rep. Gr. 15; Toothed Belt Drive; Overview -Toothed Belt Guard.
- ◆ Refer to ⇒ Rep. Gr. 19; Coolant Pipes; Overview Coolant Pipes.
- Refer to ⇒ Rep. Gr. 20; Fuel Filter; Overview Fuel Filter.
- ◆ Refer to ⇒ Rep. Gr. 26; SCR System (Selective Catalytic Reduction); Overview - Reducing Agent Injector.
- ◆ Refer to ⇒ Rep. Gr. A26 A Exhaust Jemperature Regulation; by Overview ► Exhaust Femperature Regulation pyright by AUDI AG.
- Refer to ⇒ Rep. Gr. 26 ; Emissions Control System; Overview Emissions Control System .
- Refer to ⇒ Rep. Gr. 26; EGR; Overview EGR.
- Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; Refrigerant Circuit; System Overview - Refrigerant Circuit.
- Refer to ⇒ Body Interior; Rep. Gr. 70; Instrument Panel Central Tube; Overview - Instrument Panel Central Tube .



- Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; Air Routing; Overview - Passenger Compartment Air Routing and Air Distribution.
- Refer to ⇒ Body Interior; Rep. Gr. 69; Knee Airbags; Overview Knee Airbag
- Refer to ⇒ Body Interior; Rep. Gr. 68; Storage Compartments/Covers; Component Location Overview Storage Compartments/Covers.
- ◆ Front breather valve. Refer to ⇒ "1.1 Overview Front Brakes", page 46.
- Rear breather valves. Refer to ⇒ "2.1 Overview Rear Brakes", page 87.

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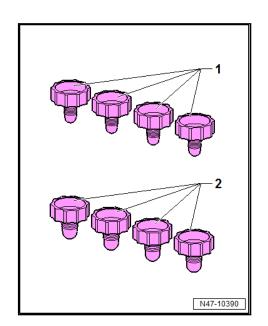
3.4 Brake Master Cylinder of the moving and described by AUDI AG does not guarantee or accept any liability and accept an

⇒ "3.4.1 Brake Master Cylinder, Removing and Installing, LHD Vehicles", page 153

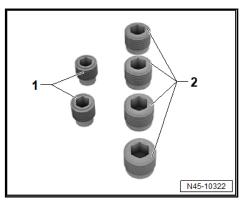
3.4.1 Brake Master Cylinder, Removing and Installing, LHD Vehicles

Special tools and workshop equipment required

 Plugs from the Repair Kit - 1H0 698 311 A-: M10 -item 1and M12 -item 2-

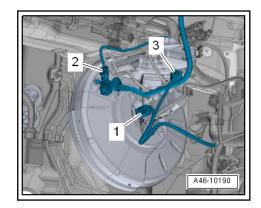


 M10 plug -item 1- or M12 -item 2- from the Assembly Part Set - 5Q0 698 311-



Removing

- Remove the brake fluid reservoir. Refer to ⇒ "3.5 Brake Fluid Reservoir, Removing and Installing", page 161.
- Disconnect the connectors:
- From the Brake Lamp Switch F-
- From the Vacuum Sensor G608-, if equipped



Place enough lint-free cloths in the area of the brake master cylinder.



CAUTION

Risk of accident due to the brakes malfunctioning.

- Brake fluid must never come into contact with fluids containing mineral oils (oil, gasoline, cleaning solutions).
- Wear safety gloves that are free of oil and grease.
- Remove the brake lines -1- on brake master cylinder.
- Immediately close open connection points with a clean plug.
- Remove the nuts -2-.
- Remove the brake master cylinder from the brake booster.
- Do not let any brake fluid run into the brake booster.

Installing

Install in reverse order of removal while noting the following:

- When inserting the brake master cylinder, make sure the pushrock is seated correctly in the brake boosters, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability
- Install the brake fluid reservoir Refer to 403.5 Brake Fluid DI AG. Reservoir, Removing and Installing", page 161.



CAUTION

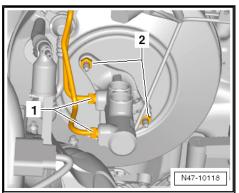
Faulty brakes increase the risk of an accident.

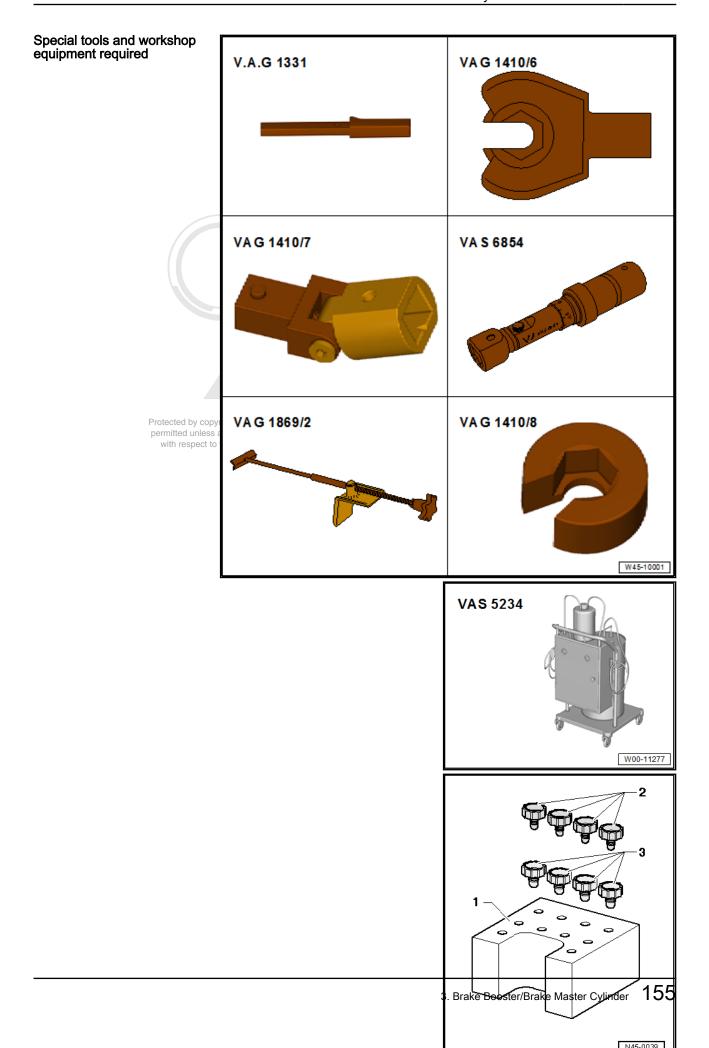
Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

Refer to ⇒ "3.1 Overview - Brake Booster/Brake Master Cylinder", page 129

3.4.2 Brake Master Cylinder, Removing and Installing, RHD Vehicles (Not for North America Market)

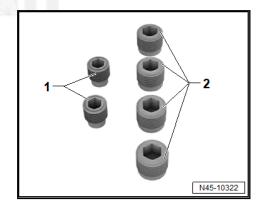




- Torque Wrench, 6-50Nm VAG 1331A-
- Open Ring Spanner Insert AF 11mm V.A.G 1410/6-
- Torque Wrench Universal Joint V.A.G 1410/7-
- Mini Torque Wrench VAS 6854-
- Brake Pedal Actuator V.A.G 1869/2- .
- Torque Wrench Assembly Tool V.A.G 1410/8-
- Brake Filling and Bleeding Equipment VAS 6860-
- Repair Kit Plugs 1H0 698 311 A-
- Engine Bung Set VAS 6122_{Protected by copyright. Copyright Copyright or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability permitted unless authorised by AUDI AG.}
- Socket T30 T10405
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- Torque Wrench V.A.G 1410-
- Torque Wrench 1331 Insert Ring Wrench 11mm & 17mm - V.A.G 1331/2-

Plugs assembly part 5Q0 698 311

- 1 M10 Plug
- 2 M12 Plug



Brake master cylinder component location in RHD vehicles:

- 1 Brake Booster with Master Brake Cylinder
- 2 ABS Hydraulic Unit N55- and ABS Control Module J104-

Removing

If equipped, remove the engine cover. Refer to \Rightarrow Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Instal-

Vehicles with diesel engine and SCR system:

- Remove the lines for the Reducing Agent Injector N474from the upper toothed belt guard. Refer to ⇒ Rep. Gr. 15; Toothed Belt Drive; Toothed Belt Guard, Removing and Installing.
- Remove the Reducing Agent Injector N474- from the emissions control module and move to the side with the lines attached. Refer to ⇒ Rep. Gr. 26; SCR System (Selective Catalytic Reduction); Reducing Agent Injector -N474-, Removing and Installing.

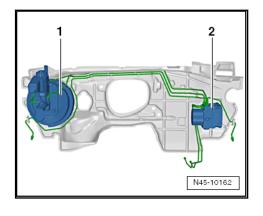
Vehicles with Diesel Engine:

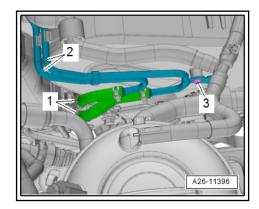
- Remove the Differential Pressure Sensor G505- and the Exhaust Pressure Sensor 1 - G450- from the cylinder head. Refer to ⇒ Rep. Gr. 23; Sensors; Differential Pressure Sensor -G505-, Removing and Installing .
- Remove the Exhaust Gas Temperature Sensor 3 G495- . Refer to ⇒ Rep. Gr. 26; Exhaust Temperature Regulation; Exhaust Gas Temperature Sensor 3 -G495-, Removing and Installing .
- Remove the bolt -3-.
- Mark the installation position and allocation of the hoses to the pipes.
- Loosen the clamps -1- and remove the hoses.
- Unclip the pipes -2- and remove with the differential pressure sensors.

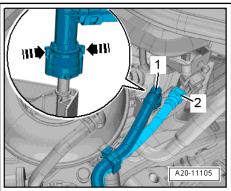
Vehicles with a gasoline engine:

Open the connector couplings -1- and -2- for the fuel lines and remove the fuel lines. Disconnect the couplings. Refer to ⇒ Rep. Gr. 20; Couplings; Couplings, Disconnecting.









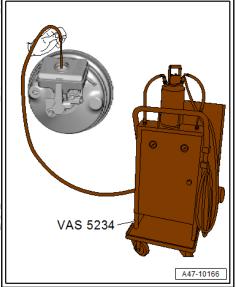
Continuation for All Vehicles:

- Place enough lint-free cloths near the engine and transmission.
- Extract as much brake fluid as possible from the brake fluid reservoir with the Brake Charger/Bleeder Unit - VAS 5234- .

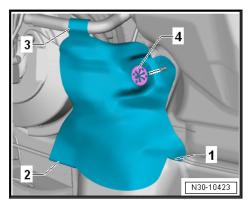


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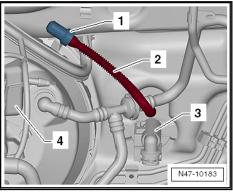


- If equipped remove the heat shield.
- To do so remove the lock washer -4- from the bulkhead.
- Open the buttons -1- to -3- on the heat shield.



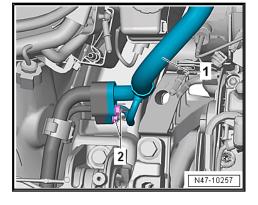
Vehicles with Manual Transmission:

- Remove the supply hose -2- for the clutch master cylinder -3- from the brake fluid reservoir -4-.
- Seal the return hose -2- for the clutch master cylinder -3- using the Sealing Tool - T10249- -1- or with the Hose Clamps -Up To 25mm - 3094- .
- Tie up the return hose -2-.



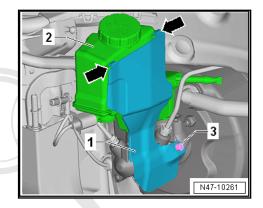
Vehicles with A/C System:

- Discharge the refrigerant circuit. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 00; Working with the A/C Service Station; Discharging the Refrigerant Circuit with the A/C Service Station .
- Remove the nuts -2- from the refrigerant line -1-.
- Remove the refrigerant line -1-.



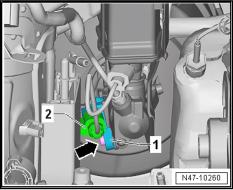
Continuation for All Vehicles:

- If equipped, remove the heat shield -1-.
- To do so, remove the bolt -3- using the Socket T30 -T10405- .
- Remove the heat shield -1- upward from the mounts -arrows- on the brake fluid reservoir -2-.

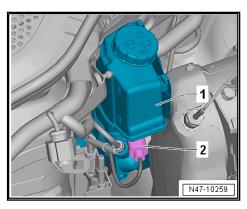


 Release and disconnect the connector -2- from the Brake Lamp Switch - F- -1-.

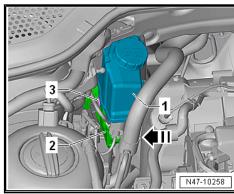




 Release and disconnect the connector -2- for the Brake Fluid Level Warning Switch - F34- from the brake fluid reservoir -1-.



- Remove the expanding rivet -3- in the -direction of the arrow-.
- Remove the brake fluid reservoir -1- upward from the brake master cylinder -2-.
- If equipped, push the refrigerant line slightly upward.



- Remove brake lines -2- on the master brake cylinder -1-.
- Seal off the brake lines with the plugs from the Repair Kit 1H0 698 311 A.
- Remove the nuts -arrows-.
- Remove the heat shield -3-.
- Carefully remove the brake master cylinder from the brake booster.

Installing

Install in reverse order of removal. Pay attention to the following points at the same time:

- When assembling the brake master cylinder with the brake booster, make sure that the pushrod is correctly seated in the brake master cylinder.
- Make sure the seal <u>⇒ Item 9 (page 132)</u> fits correctly-when by copyright. Copying for private or commercial purposes, in part or in whole, is not attaching the brake master cylinder to the brake boosteriited unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability th respect to the correctness of information in this document. Copyright by AUDI AG.
- Make sure the plugs ⇒ Item 18 (page 133) are seated correctly in the brake master cylinder.
- Coat the plugs ⇒ Item 18 (page 133) with brake fluid before pushing the brake fluid reservoir into the brake master cylin-
- The expanding rivet can be remove and installed from the other side.
- Install the brake lines carefully with the Torque Wrench -Assembly Tool - V.A.G 1410/8- .

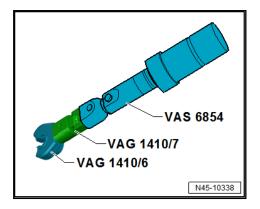
VAG 1410/8 W00-11660

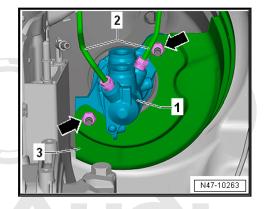
Special tool assembly for tightening the brake lines

When tightening with the Open Ring Spanner Insert - AF 11mm - V.A.G 1410/6-, Torque Wrench - Universal Joint -V.A.G 1410/7- and Mini Torque Wrench - VAS 6854-, set the torque to 12 Nm.

Vehicles without manual transmission:

Bleed the brake system. Refer to ⇒ "6.2 Hydraulic System, Bleeding", page 178.





OC-Cimmilianos

Vehicles with Manual Transmission:

- Check the seals -2- for damage and replace them if neces-
- Make sure that the seals -2- are seated correctly in the hose
- Connect the hose -1-.
- Bleed the brake system. Refer to ⇒ "6.2 Hydraulic System, Bleeding", page 178
- Bleed the clutch mechanism. Refer to ⇒ Rep. Gr. 30; Clutch Mechanism; Clutch Mechanism, Bleeding.

Vehicles with A/C System:

Fill the refrigerant circuit. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 00; Working with the A/C Service Station; Filling the Refrigerant Circuit with the A/C Service Station .

Tightening Specifications

- ◆ Refer to ⇒ "3.1.2 Overview Brake Booster/Brake Master Cylinder, RHD (Not for North America Market)", page 131
- Refer to ⇒ Rep. Gr. 15; Toothed Belt Drive; Overview -Toothed Belt Guard .
- Refer to ⇒ Rep. Gr. 20; Fuel Filter; Overview Fuel Filter.
- Refer to ⇒ Rep. Gr. 26; SCR System (Selective Catalytic Reduction); Overview - Reducing Agent Injector .
- Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; Refrigerant Circuit; System Overview - Refrigerant Circuit .
- ◆ Front breather valve. Refer to ⇒ "1.1 Overview Front Brakes", page 46.
- Rear breather valves. Refer to ⇒ "2.1 Overview Rear Brakes", page 87

Brake Fluid Reservoir, Removing and 3.5 Installing ected by copyright. Copying for private or commercial purposes, in part or in whole, is not

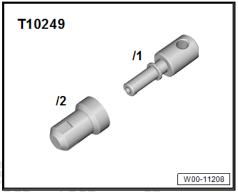
Special tools and workshop eguipment lequile durantee or accept any liability

Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit - VAS 5234-





Sealing Tool - T10249-



Removing



CAUTION

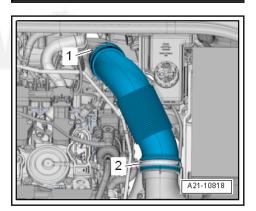
Leaking brake fluid increases the risk of injury. Risk of skin irritation and injury.

- Wear safety gloves.
- Extract as much brake fluid -2- as possible with the suction hose Brake Filling and Bleeding Equipment VAS 6860- or Brake Charger/Bleeder Unit VAS 5234 (example illustrating for prival permitted unless authorised by AUDI AG tion). with respect to the correctness of info



Vehicles with 1.8L/2.0L TFSI engine

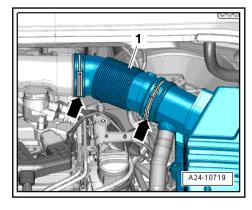
Loosen the hose clamps -1 and 2- and remove the air duct pipe.



N01-11816

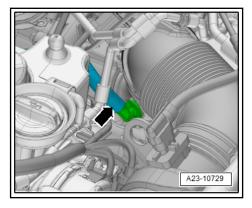
Vehicles with 2.5L TFSI engine

- Remove the engine cover. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing .
- Loosen the hose clamps -arrows- and remove the air duct pipe.

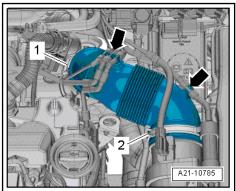


Vehicles with TDI Engine:

- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Disconnect the vacuum hose -arrow-.

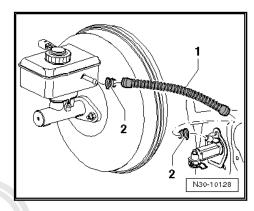


- Free up the vacuum hoses -arrows-.
- Loosen the hose clamps -1 and 2- and remove the air duct pipe.



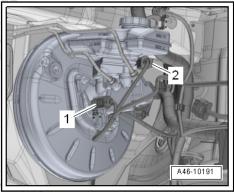
Vehicles with Manual Transmission:

 Remove the hose -1- for the clutch master cylinder, seal it with the Sealing Tool - T10249/1- and tie it up.



Continuation for All Vehicles:

- Disconnect the connector -2- for the Brake Fluid Level Warning Switch F34- .
- To protect against escaping brake fluid, place enough lintfree cloths in the area below the brake master cylinder.



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- Remove the locking pin -1-.
- Pull the brake fluid reservoir -2- out of the plugs.

Installing

Install in reverse order of removal while noting the following:

- Coat the plugs on the brake fluid reservoir with brake fluid.
- Insert the brake fluid reservoir into the plugs in the brake master cylinder.



Note

After inserting, check if the brake fluid reservoir is engaged in the retainers and is seated securely.

Secure the brake fluid reservoir with the locking pin -1-.

Vehicles with Manual Transmission:

 Bleed the clutch hydraulic. Refer to ⇒ Rep. Gr. 30; Clutch Mechanism; Clutch Mechanism, Bleeding.

Continuation for All Vehicles:

Refer to ⇒ "6.2 Hydraulic System, Bleeding", page 178.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.

1 N47-10249

N47-10249

Tightening Specifications

Refer to ⇒ Rep. Gr. 21; Charge Air System; Overview -Charge Air Hose Connections.

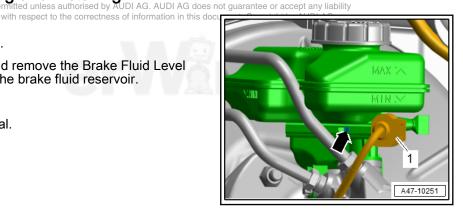
3.6 Brake Fluid Level Warning Switch - F34-, Removing and Installing r private or commercial purposes, in part or in whole, is not

Removing

- Disconnect the connector -1-.
- Release the catch -arrow- and remove the Brake Fluid Level Warning Switch - F34- from the brake fluid reservoir.

Installing

Install in reverse order of removal.



4 Vacuum System

- ⇒ "4.1 Overview Vacuum Pump", page 165
- ⇒ "4.2 Check Valve, Checking", page 167
- ⇒ "4.3 Check Valve, Removing and Installing", page 168
- ⇒ "4.4 Vacuum Sensor G608 , Removing and Installing", page 170
- ⇒ "4.5 Vacuum System, Checking", page 170
- ⇒ "4.6 Vacuum Pump, Removing and Installing", page 175

4.1 Overview - Vacuum Pump

- ⇒ "4.1.1 Overview Vacuum Pump, 4-Cylinder TFSI Engine", page 165
- ⇒ "4.1.2 Overview Vacuum Pump, 5-Cylinder TFSI Engine", page 166

4.1.1 Overview - Vacuum Pump, 4-Cylinder TFSI Engine



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- ♦ The 1.8L/2.0L TFSI engines have a mechanical vacuum pump. The illustration shows these engines.
- ♦ The TDI engines have a mechanical vacuum pump that is combined into one unit with the oil pump. Removing and Installing. Refer to ⇒ Rep. Gr. 17; Oil Pan/Oil Pump; Oil Pump, Removing and Installing.

1 - Bolt

☐ Tightening specification. Refer to ⇒ Engine; Rep. Gr. 24; High Pressure Pump; Overview - High Pressure Pump.

2 - High Pressure Pump

□ Removing and Installing. Refer to ⇒ Engine; Rep. Gr. 24; High Pressure Pump; High Pressure Pump, Removing and Installing .

3 - Seal

□ Replace

4 - Vacuum Hose

5 - Vacuum Hose

- With Vacuum Sensor -G608-
- □ Replace the vacuum hose if damaged
- □ Vacuum Sensor -G608-, Removing and Installing. Refer to ⇒ "4.4 Vacuum Sensor G608, Removing and Installing", page 170.

6 - O-Ring

□ Replace after removing

7 - Coolant Line

8 - Bolt

□ 9 Nm

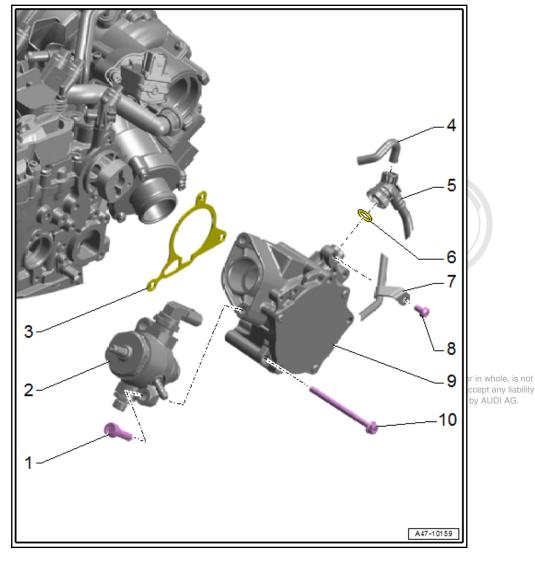
9 - Vacuum Pump

- ☐ The vacuum pump is mechanically driven.
- □ Vacuum System, Checking. Refer to ⇒ "4.5 Vacuum System, Checking", page 170.
- □ Removing and Installing. Refer to ⇒ "4.6 Vacuum Pump, Removing and Installing", page 175.

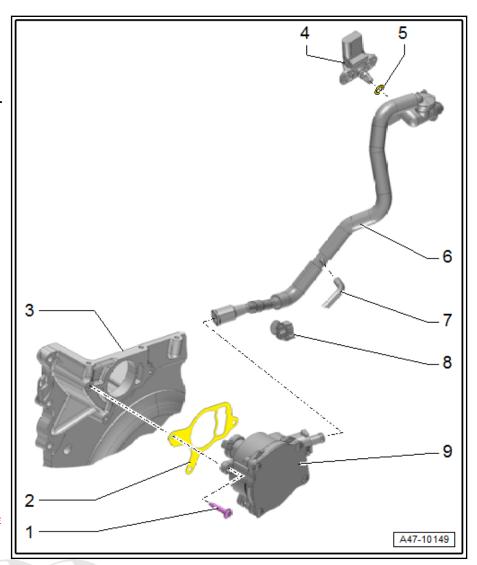
10 - Bolt

□ 9 Nm

4.1.2 Overview - Vacuum Pump, 5-Cylinder TFSI Engine



- 1 Bolt
 - □ 9 Nm
- 2 Seal
 - □ Replace after removing
- 3 Lower Timing Chain Cover
- 4 Vacuum Sensor G608-
 - Removing and Installing. Refer to ⇒
 "4.4 Vacuum Sensor
 G608, Removing and Installing", page 170
- 5 O-Ring
 - □ Replace if damaged
- 6 Vacuum Hose
 - With check valve
 - ☐ Replace the vacuum hose if damaged
- 7 Vacuum Hose
- 8 Clip
- 9 Vacuum Pump
 - ☐ The vacuum pump is mechanically driven.
 - Refer to ⇒ "4.5 Vacuum System, Checking", page 170
 - Refer to ⇒ "4.6.2 Vacuum Pump, Removing and Installing, 5-Cylinder TFSI Engine", page 176

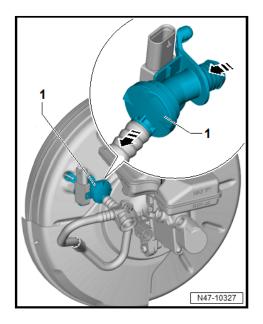


4.2 Check Valve, Checking

- Remove the check valve -1-. Refer to ⇒ "4.3 Check Valve, Removing and Installing", page 168.
- The valve must allow air to flow in the direction of the arrow.
- · The valve must remain closed in the opposite direction.
- Install the check valve. Refer to ⇒ "4.3 Check Valve, Removing and Installing", page 168



Whote the flow direction: the arrow symbol faces the vacuum pump.



4.3 Check Valve, Removing and Installing



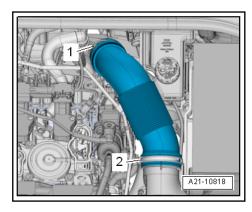
Note

The check valve is integrated in the vacuum hose and cannot be replaced separately.

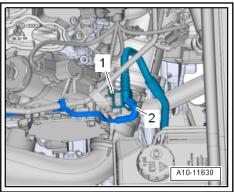
Removing

Vehicles with 1.8L/2.0L TFSI engine

- Remove the engine cover. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- Loosen the hose clamps -1 and 2- and remove the air duct

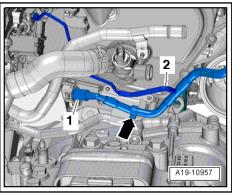


- Disconnect the vacuum hose -2-.
- Press the release button on the vacuum hose -1- and remove the hose from the vacuum pump.



Vehicles with 2.5L TFSI engine

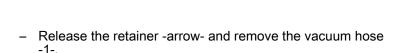
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24; Air Filter; Overview - Air Filter Housing .
- Remove the vacuum hose -2-.
- Free up the vacuum hose -1-, pull it out of the brake booster vacuum pump and remove it.



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Vehicles with TDI Engine:

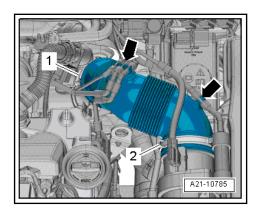
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- Free up the vacuum hoses -arrows-.
- Loosen the hose clamps -1 and 2- and remove the air duct pipe.

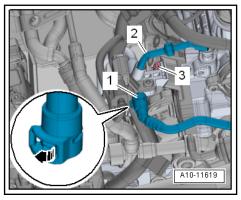




Note

Different equipment depending on the version.





Continuation for All Engines:

- If installed, disconnect the connector -1- from the Vacuum Sensor - G608- .
- Carefully remove the vacuum hose -2- from the brake booster.



Note

Do not damage the vacuum hose. A damaged vacuum hose must be replaced.

Installing

Install in reverse order of removal while noting the following:

Bring the vacuum hose with the check valve into the installation position and insert.



Note

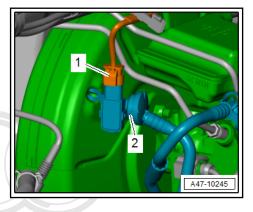
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For easier assembly, lightly dampen the check valve and the atom in this document. Copyright by AUDI AG. vacuum hose with some water (but not oil).

Install the engine cover. Refer to ⇒ Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.

Tightening Specifications

Refer to ⇒ Rep. Gr. 21; Charge Air System; Overview -Charge Air Hose Connections



4.4 Vacuum Sensor - G608- , Removing and Installing

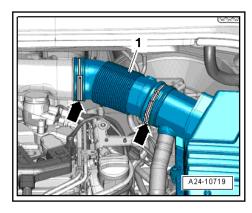
Removing

Vehicles with 4-cylinder engine:

Remove the check valve. Refer to ⇒ "4.3 Check Valve, Removing and Installing", page 168.

Vehicles with 2.5L TFSI engine

 Loosen the hose clamps -arrows- and remove the air duct pipe.



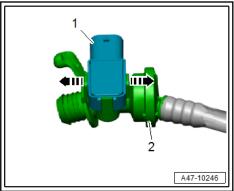
Continuation for All Vehicles:

 Release the retainers -arrows- and remove the Vacuum Sensor - G608- -item 1- from the check valve.

Installing

Install in reverse order of removal while noting the following:

- Push in the Vacuum Sensor G608- until it engages audibly.
- Install the check valve. Refer to ⇒ "4.3 Check Valve, Removing and Installing", page 168.



4.5 Vacuum System, Checking

- ⇒ "4.5.1 Tests and Test Requirements", page 170
- ⇒ "4.5.2 Brake Booster Tester, Connecting", page 171
- ⇒ "4.5.3 Vacuum, Checking", page 172
- ⇒ "4.5.4 Leak Test", page 173
- ⇒ "4.5.5 Vacuum, Creating with Hand Vacuum Pump", page 174

4.5.1 Tests and Test Requirements

The following checks will be helpful when performing fault finding if there are complaints regarding the brake booster or the so-called »hard brake pedal«.

The following components are included in the check:

- ♦ Brake Boostery copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability
- Gasket between the brake master cylinder and the brake by AUDI AG. booster
- Check Valve
- Vacuum hoses with connectors
- Vacuum pump (if equipped)

Keep the geographical surrounding in mind when evaluating the measurement results. The higher above sea level, the lower the air pressure.

Always observe all test requirements before checking the vacuum system:

- Visually inspect all of the vacuum hoses for damage (for example, tears or damage caused by animals) and secure fit
- Maintain clean working conditions when working on the vacuum system
- Clean the engine compartment before starting work, if necessary

Special tools and workshop equipment required

♦ Brake Servo Tester - VAS 6721-



4.5.2 Brake Booster Tester, Connecting

Remove the vacuum hose from the brake booster.



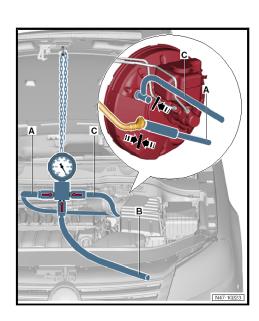
Note

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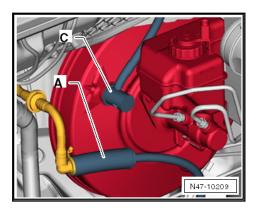
Pressing the brake pedal a few times beforehand makes it easier to remove the vacuum hose.

- Connect the Brake Servo Tester - VAS 6721-

Item	Compo- nent	Explanation
Α	Shut-off valve	In the direction toward the vacuum hose, the check valve and vacuum pump (if equipped)
В	Shut-off valve	♦ Opening the Brake Servo Tester - VAS 6721- makes it easier to remove
		◆ Open to simulate a malfunction source
		◆ Connect the Hand Vacuum Pump - VAS 6213
С	Shut-off valve	In the direction toward the brake booster



Connect the hose -A- from the Brake Servo Tester - VAS 6721- to the vacuum hose and push the adapter -C- into the brake booster.



4.5.3 Vacuum, Checking



Note

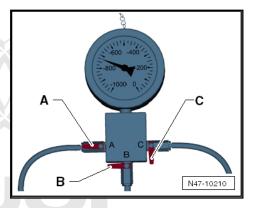
- The average earth atmospheric air pressure at sea level (N. N.) is 1013 mbar and it decreases dramatically at higher altitudes (approximately 100 mbar (1.45 psi) every 1000 meters higher) Local and time fluctuations also influence the vacuum.
- A cold engine, the A/C switched on as well as the engine simply idling can negatively influence the vacuum.
- Check all the vacuum hoses beforehand for damage (for example, tears or damage caused by animals) and secure
- Connect the Brake Servo Tester VAS 6721- . Refer to ⇒ 4.5.2 Brake Booster Tester, Connecting", page 171.
- Open the shut-off valve -A-.
- Close the shut-off valves -B and C-.
- Start the warm (above 60 °C (140 °F)) engine and press the accelerator pedal one time quickly (engine speed higher than 2,000 RPM).
- Read the displayed measured value.

Normally (see note), the vacuum should be between 600 and 950 mbar (8.7 and 13.78 psi) (depending on the engine installed).

Check the vacuum system for leaks if the measured value is not reached, even though all requirements (see notes) are met.



Opening the shut-off valve -B- makes it easier to remove the hose connections and the adapter.



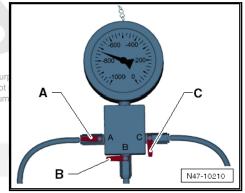
4.5.4 Leak Test



Note

- ♦ The average earth atmospheric air pressure at sea level (N. N.) is 1013 mbar and it decreases dramatically at higher altitudes (approximately 100 mbar (1.45 psi) every 1000 meters higher) Local and time fluctuations also influence the vacuum.
- A cold engine, the A/C switched on as well as the engine simply idling can negatively influence the vacuum.
- Check all the vacuum hoses beforehand for damage (for example, tears or damage caused by animals) and secure fit.
- Connect the Brake Servo Tester VAS 6721- . Refer to ⇒
 "4.5.2 Brake Booster Tester, Connecting", page 171
- Open the shut-off valve -A-.
- Close the shut-off valves -B and C-.
- Start the warm (above 60 °C (140 °F)) engine and press the accelerator pedal one time quickly (engine speed higher than 2,000 RPM).

Normally (see note), the vacuum should be between 600 and his docu 950 mbar (8.7 and 13.78 psi) (depending on the engine installed).



- Open the shut-off valve -C- to evacuate the brake booster.
- Turn off the engine.
- Read the displayed measured value and write it down.
- The vacuum may drop 400 mbar (5.8 psi) in 12 hours.



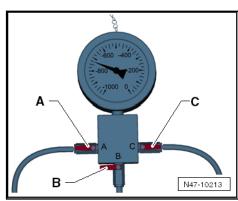
Note

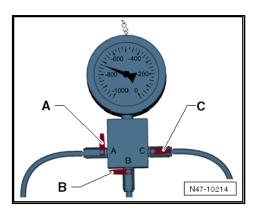
The vacuum will drop considerably within a few seconds if there are large leaks.

If the pressure drop is large, look for the area with the leak:

A - Testing the vacuum near the brake booster

 Close the shut-off valve -A- after creating the vacuum to test the brake booster vacuum system.

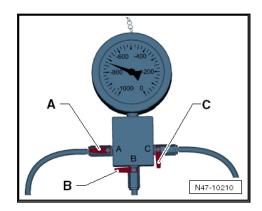




B - Testing the vacuum near the check valve, vacuum hoses with connectors and vacuum pump/intake manifold

 Close the shut-off valve -C- after creating the vacuum to check the vacuum system from the Brake Servo Tester -VAS 6721- up to the intake manifold or up to the vacuum pump.

Opening the shut-off valve -B- makes it easier to remove the hose connections and the adapter.

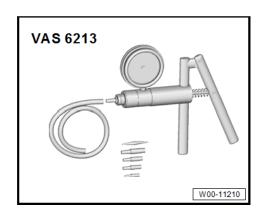


4.5.5 Vacuum, Creating with Hand Vacuum

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Special tools and workshop equipment required

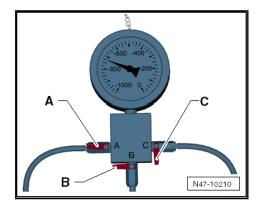
Hand Vacuum Pump - VAS 6213-



Procedure

In certain situations, the vacuum can be created using a Hand Vacuum Pump - VAS 6213- instead of using the engine or a vacuum pump.

- To do so, connect the Hand Vacuum Pump VAS 6213- to the vacuum hose from the connection -B- to the Brake Servo Tester - VAS 6721- .
- Open the shut-off valve -B-.
- Create the vacuum using the Hand Vacuum Pump VAS 6213- until a vacuum between 600 and 950 mbar (8.7 and 13.78 psi) is displayed on the Brake Servo Tester - VAS 6721- .
- Then perform the relevant tests.



4.6 Vacuum Pump, Removing and Instal-

⇒ "4.6.1 Vacuum Pump, Removing and Installing, 4-Cylinder TFSI Engines", page 175

⇒ "4.6.2 Vacuum Pump, Removing and Installing, 5-Cylinder TFSI Engine", page 176

⇒ "4.6.3 Vacuum Pump, Removing and Installing, TDI Engines", page 176

4.6.1 Vacuum Pump, Removing and Installing, 4-Cylinder TFSI Engines

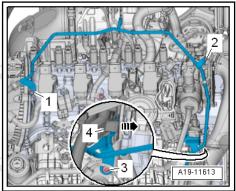
Removing

Remove the high pressure pump. Refer to ⇒ Engine; Rep. Gr. 24; High Pressure Pump; High Pressure Pump, Removing and Installing.



Risk of destroying the coolant line by deformation.

- Never change the shape of the coolant line.
- Remove the bolts -1, 2 and 3- and carefully push the coolant line slightly to the side.



- Remove the vacuum hose -2- from the vacuum pump -1- by pressing the release buttons on both sides.
- Remove the bolts -arrows- and remove the vacuum pump.

Installing

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Install in reverse order of removal while noting the following is document.



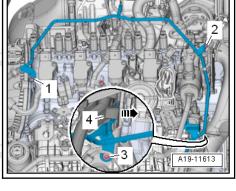
Note

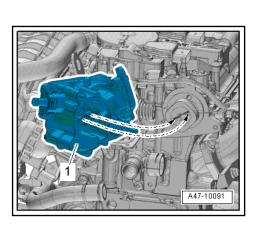
Replace the seal.

- Make sure the seal is in the correct installation position.
- Turn the vacuum pump yoke -1- so it engages in the groove on the camshaft when positioning the vacuum pump -arrows-.

Tightening Specifications

- Refer to ⇒ "4.1 Overview Vacuum Pump", page 165
- Refer to ⇒ Rep. Gr. 24; High Pressure Pump; Overview -High Pressure Pump.





4.6.2 Vacuum Pump, Removing and Installing, 5-Cylinder TFSI Engine

Q

Removing

- Remove the starter. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Starter; Starter, Removing and Installing.
- Remove the left coolant pipe. Refer to ⇒ Rep. Gr. 19; Coolant Pipes; Coolant Pipes, Removing and Installing .
- Remove the bolts -arrows- and remove the vacuum pump -1-.

Installing

Install in reverse order of removal while noting the following:



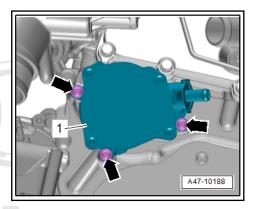
Note

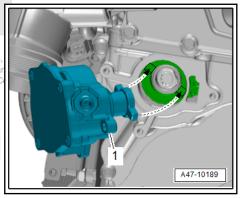
Replace the seal.

- Make sure the seal is in the correct installation position.
- Turn the vacuum pump yoke -1- so that it engages in the grooves on the drive chain sprocket for the camshaft timing chain when positioning the vacuum pump -arrows-.

Tightening Specifications rotected by copyright. Copying for private or commercial purposes permitted unless authorised by AUDI AG. AUDI AG does not guara

- Refer to <u>⇒ "4.1.2 Overview SVaculum Pump, 5-Oylinder Interest</u>ment. C Engine", page 166
- Refer to ⇒ Rep. Gr. 19; Coolant Pipes; Coolant Pipes, Removing and Installing.





4.6.3 Vacuum Pump, Removing and Installing, TDI Engines

The TDI engines have a mechanical vacuum pump that is combined into one unit with the oil pump. Removing and Installing. Refer to ⇒ Rep. Gr. 17; Oil Pan/Oil Pump; Oil Pump, Removing and Installing.

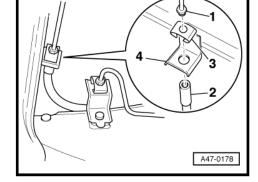
5 Brake Lines

⇒ "5.1 Separating Points", page 177

5.1 Separating Points

Brake Lines on Underbody

- 1 Brake Line
- 2 Brake Hose
- 3 Spring
- 4 Brake Hose Bracket

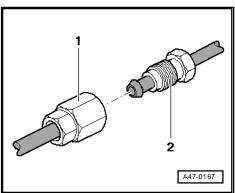


Brake Line to Brake Line

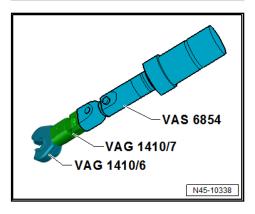
 Counterhold the union nut -1- on when tightening the banjo bolt -1-.

Tightening Specification

- With standard tool: 14 Nm
- With special tool Refer to ⇒ Fig. ""Brake lines tightening using special tools", page 177 12 Nm



Brake lines tightening using special tools



Special tools and workshop equipment required

- ♦ Open Ring Spanner Insert AF 11mm V.A.G 1410/6-
- ◆ Torque Wrench Universal Joint V.A.G 1410/7-
- ♦ Mini Torque Wrench VAS 6854-



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6 Hydraulic System

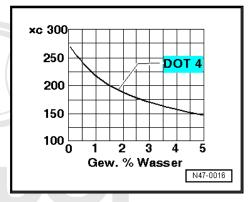
- ⇒ "6.1 Brake Fluid General Information", page 178
- ⇒ "6.2 Hydraulic System, Bleeding", page 178
- ⇒ "6.3 Hydraulic System, Post-Bleeding", page 182
- ⇒ "6.4 Leak Test", page 184

Brake Fluid General Information 6.1

Brake fluid is hygroscopic, meaning that it has the ability to absorb water and moisture from the air.

If water has been absorbed, the boiling point will drop, for example, during high braking temperatures the brake fluid may develop steam bubbles and cause the brakes to fail.

Over time, brake fluid will darken in color. Dark-colored brake fluid does not indicate anything about its quality. The color forms due to chemical reactions.

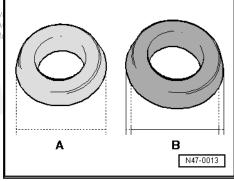


Even the smallest amount on a seal or boot can cause the part to change and thereby affect the function of the brake system ving for pri The results of an unclean brake system first show themselves by AUDI months later, causing increased repair costs, especially on vehicles of in cles with ABS.

- A Boot Original Size
- B Boot Swollen Through Contact with Mineral Oil

As a result of the previously mentioned points:

- Always keep brake fluid containers securely closed. Only this can ensure that no oil, dirt or cleaning materials and no humidity can enter the container.
- Store brake fluid containers away from oil (even hydraulic oil) and cleaning fluids to prevent an accidental mixing of both fluids or even filling the brake system with the wrong fluid.





Note

- Only use new brake fluid.
- Rinse any spilled brake fluid with plenty of water.

6.2 Hydraulic System, Bleeding

Special tools and workshop equipment required

◆ Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit - VAS 5234-

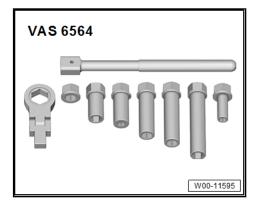


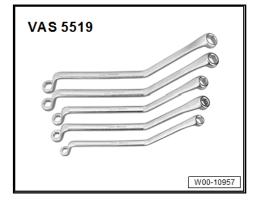
- ◆ Brake Charger/Bleeder Unit Adapter VAS 5234/1A-
- ♦ Brake Bleeding Tool Set VAS 6564-



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♦ Wrench - Brake Bleeder Set - VAS 5519-



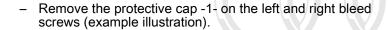


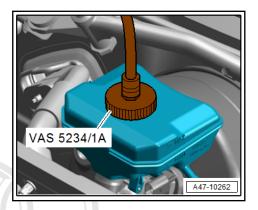
Procedure

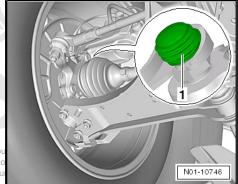
The brake system is divided diagonally:

- Left front wheel and right rear wheel.
- ◆ Right front wheel and left rear wheel.
- Depending on the wheel combination, remove the wheels. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

- Attach the Brake Bleeder Adapter VAS 5234/1A- to the brake fluid reservoir.
- Connect the filling hose from the Brake Filling and Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit -VAS 5234-.
- Set a work pressure of 2.0 bar (29.01 psi) at the Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit - VAS 5234- and turn it on. Refer to ⇒ Owner's Manual .



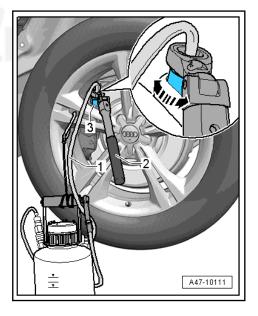




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The four-piston brake calipers each have two bleed screws.

- Position the socket -3- at the bleed screw using the ratchet
- Attach the bleeder hose -1- through the socket onto the bleed screw.



- Position the socket -3- at the inner bleed screw using the ratchet -2-.
- Attach the bleeder hose -1- through the socket onto the bleed screw.
- Use a suitable bleeder hose. It must be seated tightly on the bleed screw so that no air can enter the brake system.

Bleeding sequence

- Outer left front four-piston brake caliper
- 2 -Left Front Inner Brake Caliper
- 3 -Outer right front four-piston brake caliper
- 4 -Right Front Inner Brake Caliper
- 5 -Left Rear Brake Caliper
- Right Rear Brake Caliper
- Open the bleed screw and leave open until the leaking brake fluid is clear and without bubbles.
- Press brake pedal five times to assist the bleeding proce-
- Tighten the bleed screw, remove the bleeder hose and place the protective cap on the bleed screw.
- Repeat the bleeding procedure in the specified sequence for the remaining brake calipers.
- Start the engine and check the brake pedal travel and pressure.
- If the pedal travel is too long, check the brake system for leaks or repeat the bleeding procedure.
- Remove the Adapter VAS 5234/1A- from the brake fluid reservoir.
- Fill the brake fluid reservoir under consideration of brake pad wear up to the "MAX" mark and tighten the fuel cap.

(I) NOTICE

There is a risk of contamination and paint damage from leaking brake fluid.

- Rinse off any leaking brake fluid immediately using plenty of water.
- A road test must be performed after bleeding. During this, at least one ABS control must be performed!

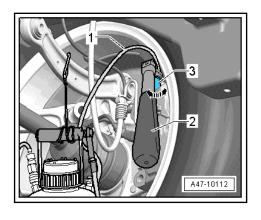
CAUTION

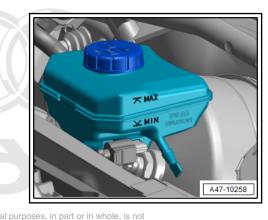
Faulty brakes increase the risk of an assaultorised by AUDI AG. AUDI AG do

Make sure the brakes are working correctly before driving the vehicle for the first time.

Tightening Specifications

- Refer to ⇒ "1.1 Overview Front Brakes", page 46
- Refer to ⇒ "2.1 Overview Rear Brakes", page 87





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6.3 Hydraulic System, Post-Bleeding

Perform the post-bleeding procedure when:

 The brake pedal travel is too long, or the so-called »soft brake pedal«

Special tools and workshop equipment required

 Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit - VAS 5234-

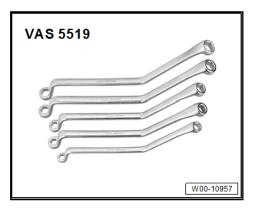


- Brake Charger/Bleeder Unit Adapter VAS 5234/1A-
- ♦ Brake Bleeding Tool Set VAS 6564-



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Wrench - Brake Bleeder Set - VAS 5519-



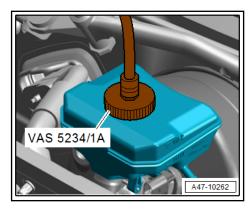
Procedure

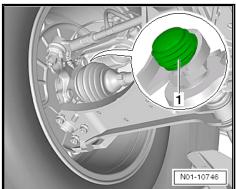


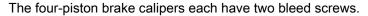
Note

A second technician is required for the post-bleeding procedure.

- Attach the Brake Bleeder Adapter VAS 5234/1A- to the brake fluid reservoir.
- Connect the filling hose from the Brake Filling and Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit -VAS 5234- .
- Set a work pressure of 2.0 bar (29.01 psi) at the Bleeding Equipment - VAS 6860- or Brake Charger/Bleeder Unit -VAS 5234- and turn it on. Refer to ⇒ Owner's Manual .
- Depending on the wheel combination, remove the wheels. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- Remove the protective cap -1- on the left and right bleed screws (example illustration).





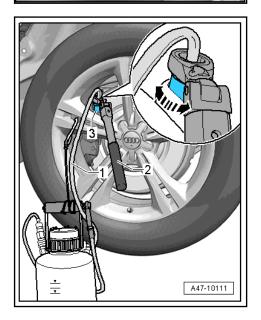


- Position the socket -3- at the bleed screw using the ratchet -2-.
- Attach the bleeder hose -1- through the socket onto the bleed screw.



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- Position the socket -3- at the inner bleed screw using the ratchet -2-.
- Attach the bleeder hose -1- through the socket onto the bleed screw.
- Use a suitable bleeder hose. It must be seated tightly on the bleed screw so that no air can enter the brake system.

Bleeding sequence

- 1 Outer left front four-piston brake caliper
- 2 Left Front Inner Brake Caliper
- 3 Outer right front four-piston brake caliper
- 4 Right Front Inner Brake Caliper
- 5 Left Rear Brake Caliper
- 6 Right Rear Brake Caliper
- Depress the brake pedal forcefully and hold.
- Open the bleed screw on the brake caliper.
- Press the brake pedal down until it stops.
- Close the bleeder screw with the pedal depressed.
- Release the brake pedal slowly.



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This bleeding procedure must be performed five times per brake caliper.

- Repeat the bleeding procedure in the specified sequence for the remaining brake calipers.
- Fill the brake fluid reservoir under consideration of brake pad wear up to the "MAX" mark and tighten the fuel cap.



CAUTION

Faulty brakes increase the risk of an accident.

 Make sure the brakes are working correctly before driving the vehicle for the first time.



Note

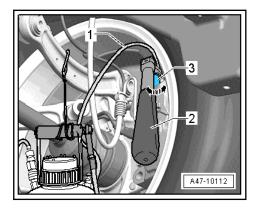
A road test must be performed after bleeding. During this, at least one ABS control must be performed!

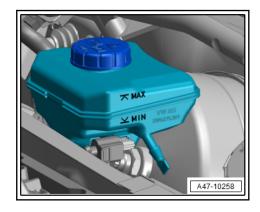
Tightening Specifications

- ◆ Refer to <u>⇒ "1.1 Overview Front Brakes"</u>, page 46
- ◆ Refer to ⇒ "2.1 Overview Rear Brakes", page 87

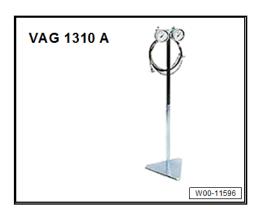
6.4 Leak Test

Special tools and workshop equipment required





Brake Pressure Gauge - V.A.G 1310A-



◆ Brake Pedal Actuator - V.A.G 1869/2- .



High Pressure Test:

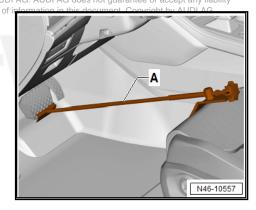
- Brake system (brake master cylinder, brake hoses, brake lines and brake calipers) tested for function and leaks.
- Remove the bleed screw at one of the front brake calipers.
 Connect the Brake Pressure Gauge V.A.G 1310 A- and
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- Insert the Brake Pedal Actuator V.A.G 1869/2--item A- between the brake pedal and driver seat. Apply pressure to the brake pedal until the pressure gauge indicates a pressure of 50 bar (725.19 psi). The pressure must not drop more than 4 bar (58.02 psi) during the test period of 45 seconds.

Replace the brake master cylinder if the pressure decrease is too high.

Low pressure testing:

- Set the brake pedal actuator back far enough that the pressure gauge indicates 6 bar (87.02 psi) positive pressure.
- The pressure must not drop by more than 1 bar (14.5 psi) during a test period of 3 minutes.

Replace the brake master cylinder if the pressure decrease is too high.



Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described
 in this manual, we suggest you leave such repairs to an authorized Audi retailer or other
 qualified shop. We especially urge you to consult an authorized Audi retailer before beginning
 repairs on any vehicle that may still be covered wholly or in part by any of the extensive
 warranties issued by Audi.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system
 or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an
 approved fire extinguisher handy.

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- Audi is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Audi retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the Audi Factory Approved Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the
 purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may
 crumble under continuous load. Never work under a vehicle that is supported solely by a jack.
 Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of
 injury to yourself and others if you are tired, upset or have taken medicine or any other
 substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace
 when you work near machine tools or running engines. If your hair, clothing, or jewelry were to
 get caught in the machinery, severe injury could result.

Cautions & Warnings

- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are
 designed to be used only once and are unreliable and may fail if used a second time. This
 includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the
 recommendations in this manual replace these fasteners with new parts where indicated,
 and any other time it is deemed necessary by inspection.
- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand.
 Read all the instructions thoroughly, do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Audi specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these
 tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten
 fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping
 hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the
 proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a
 stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The
 A/C system should be serviced only by trained automotive service technicians using approved
 refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar
 with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame.
 Excessive heat will increase system pressure and may cause the system to burst.

Cautions & Warnings

- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Audi Service technicians should test, disassemble or any liability service the airbag system.
- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not
 exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute
 before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only
 be tested by trained Audi Service technicians using the Audi Factory Approved Scan Tool (ST)
 or an approved equivalent. The airbag unit must never be electrically tested while it is not
 installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire
 that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other
 sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times
 before breaking the bead from the rim. Completely remove the tire from the rim before
 attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.